

SEQUENCE LISTING



<110> Hastings, et al.
 <120> Novel Hyaluronan-Binding Proteins and Encoding Genes
 <130> PF487
 <140> 09/466,778
 <141> 1999-12-20
 <150> 60/113,871
 <151> 1998-12-23
 <160> 37
 <170> PatentIn Ver. 2.0
 <210> 1
 <211> 6761
 <212> DNA
 <213> Homo sapiens
 <220>
 <221> CDS
 <222> (170)..(6643)
 <220>
 <221> misc_feature
 <222> (6342)
 <223> n equals a, t, g or c
 <220>
 <221> misc_feature
 <222> (6496)
 <223> n equals a, t, g or c
 <220>
 <221> misc_feature
 <222> (6529)
 <223> n equals a, t, g or c
 <220>
 <221> misc_feature
 <222> (6535)
 <223> n equals a, t, g or c
 <220>
 <221> misc_feature
 <222> (6537)
 <223> n equals a, t, g or c
 <220>
 <221> misc_feature
 <222> (6688)
 <223> n equals a, t, g or c
 <220>
 <221> misc_feature
 <222> (6724)
 <223> n equals a, t, g or c
 <220>
 <221> misc_feature
 <222> (6748)
 <223> n equals a, t, g or c
 <220>

```

<221> misc_feature
<222> (6749)
<223> n equals a, t, g or c

<220>
<221> misc_feature
<222> (6750)
<223> n equals a, t, g or c

<220>
<221> misc_feature
<222> (6753)
<223> n equals a, t, g or c

<400> 1
ctgcgaccgg tctgccactt gccaggtgac cgctgatggg aagaccagct gtgtgtgcag 60

ggaaagcgag gtgggggatg ggcgtgcctg ctacggacac ctgctccacg aggtgcagaa 120

ggccacgcag acaggccggg tgttcctgca gctgaggggc gccgtggcc atg atg gac 178
                                     Met Met Asp
                                     1

cag ggc tgc cgg gaa atc ctt acc aca gcg ggc cct ttc acc gtg ctg 226
Gln Gly Cys Arg Glu Ile Leu Thr Thr Ala Gly Pro Phe Thr Val Leu
      5              10              15

gtg cca tcc gtc tcc tcc ttc tcc tcc agg acc atg aat gca tcc ctt 274
Val Pro Ser Val Ser Ser Phe Ser Ser Arg Thr Met Asn Ala Ser Leu
      20              25              30              35

gcc cag cag ctc tgt aga cag cac atc atc gca ggg cag cac atc ctg 322
Ala Gln Gln Leu Cys Arg Gln His Ile Ile Ala Gly Gln His Ile Leu
              40              45              50

gag gac aca agg acc caa caa aca cga agg tgg tgg acg ctg gcc ggg 370
Glu Asp Thr Arg Thr Gln Gln Thr Arg Arg Trp Trp Thr Leu Ala Gly
              55              60              65

cag gag atc acc gtc acc ttt aac caa ttc acg aaa tac tcc tac aag 418
Gln Glu Ile Thr Val Thr Phe Asn Gln Phe Thr Lys Tyr Ser Tyr Lys
              70              75              80

tac aaa gac cag ccc cag cag acg ttc aac atc tac aag gcc aac aac 466
Tyr Lys Asp Gln Pro Gln Gln Thr Phe Asn Ile Tyr Lys Ala Asn Asn
              85              90              95

ata gca gct aat ggc gtc ttc cac gtg gtc act ggc ctg cgg tgg cag 514
Ile Ala Ala Asn Gly Val Phe His Val Val Thr Gly Leu Arg Trp Gln
      100              105              110              115

gcc ccc tct ggg acc cct ggg gat ccc aag aga act atc gga cag atc 562
Ala Pro Ser Gly Thr Pro Gly Asp Pro Lys Arg Thr Ile Gly Gln Ile
              120              125              130

ctc gcc tct acc gag gcc ttc agc cgc ttt gaa acc atc ctg gag aac 610
Leu Ala Ser Thr Glu Ala Phe Ser Arg Phe Glu Thr Ile Leu Glu Asn
              135              140              145

tgt ggg ctg ccc tcc atc ctg gac gga cct ggg ccc ttc aca gtc ttt 658
Cys Gly Leu Pro Ser Ile Leu Asp Gly Pro Gly Pro Phe Thr Val Phe
              150              155              160

gcc cca agc aat gag gct gtg gac agc ttg cgt gac ggc cgc ctg atc 706
Ala Pro Ser Asn Glu Ala Val Asp Ser Leu Arg Asp Gly Arg Leu Ile
              165              170              175

tac ctc ttc aca gcg ggt ctc tct aaa ctg cag gag ttg gtg cgg tac 754

```

Tyr	Leu	Phe	Thr	Ala	Gly	Leu	Ser	Lys	Leu	Gln	Glu	Leu	Val	Arg	Tyr			
180					185					190					195			
cac	atc	tac	aac	cac	ggc	cag	ctg	acc	gtt	gag	aag	ctc	atc	tcc	aag		802	
His	Ile	Tyr	Asn	His	Gly	Gln	Leu	Thr	Val	Glu	Lys	Leu	Ile	Ser	Lys			
			200						205					210				
ggg	cgg	atc	ctc	acc	atg	gcg	aac	cag	gtc	ctg	gct	gtg	aac	att	tct		850	
Gly	Arg	Ile	Leu	Thr	Met	Ala	Asn	Gln	Val	Leu	Ala	Val	Asn	Ile	Ser			
			215					220					225					
gag	gag	ggg	cgc	atc	ctg	ctg	gga	ccc	gag	ggg	gtc	ccg	ctg	cag	agg		898	
Glu	Glu	Gly	Arg	Ile	Leu	Leu	Gly	Pro	Glu	Gly	Val	Pro	Leu	Gln	Arg			
		230					235					240						
gta	gac	gtg	atg	gcc	gcc	aat	ggc	gtg	atc	cac	atg	ctg	gac	ggc	atc		946	
Val	Asp	Val	Met	Ala	Ala	Asn	Gly	Val	Ile	His	Met	Leu	Asp	Gly	Ile			
		245				250					255							
ctg	ctg	ccc	ccg	acc	atc	ctg	ccc	atc	ctg	ccc	aag	cac	tgc	agc	gag		994	
Leu	Leu	Pro	Pro	Thr	Ile	Leu	Pro	Ile	Leu	Pro	Lys	His	Cys	Ser	Glu			
260					265				270						275			
gag	cag	cac	aag	att	gtg	gcg	ggc	tcc	tgt	gtg	gac	tgc	caa	gcc	ctg		1042	
Glu	Gln	His	Lys	Ile	Val	Ala	Gly	Ser	Cys	Val	Asp	Cys	Gln	Ala	Leu			
			280						285					290				
aac	acc	agc	acg	tgt	ccc	ccc	aac	agt	gtg	aag	ctg	gac	atc	ttc	ccc		1090	
Asn	Thr	Ser	Thr	Cys	Pro	Pro	Asn	Ser	Val	Lys	Leu	Asp	Ile	Phe	Pro			
			295					300					305					
aag	gag	tgt	gtc	tac	atc	cat	gac	cca	acg	ggg	ctc	aat	gtg	cta	aag		1138	
Lys	Glu	Cys	Val	Tyr	Ile	His	Asp	Pro	Thr	Gly	Leu	Asn	Val	Leu	Lys			
		310					315					320						
aag	ggc	tgt	gcc	agc	tac	tgc	aac	caa	acc	atc	atg	gaa	caa	ggc	tgc		1186	
Lys	Gly	Cys	Ala	Ser	Tyr	Cys	Asn	Gln	Thr	Ile	Met	Glu	Gln	Gly	Cys			
		325				330					335							
tgc	aaa	ggg	ttt	ttc	ggg	cct	gac	tgc	acg	cag	tgt	cct	ggg	ggc	ttc		1234	
Cys	Lys	Gly	Phe	Phe	Gly	Pro	Asp	Cys	Thr	Gln	Cys	Pro	Gly	Gly	Phe			
340					345				350						355			
tcc	aac	ccc	tgc	tat	ggc	aaa	ggc	aat	tgc	agt	gat	ggg	atc	cag	ggc		1282	
Ser	Asn	Pro	Cys	Tyr	Gly	Lys	Gly	Asn	Cys	Ser	Asp	Gly	Ile	Gln	Gly			
				360					365					370				
aat	ggg	gcc	tgc	ctc	tgc	ttc	cca	gac	tac	aag	ggc	atc	gcc	tgc	cac		1330	
Asn	Gly	Ala	Cys	Leu	Cys	Phe	Pro	Asp	Tyr	Lys	Gly	Ile	Ala	Cys	His			
			375					380					385					
atc	tgc	tcg	aac	cca	aac	aag	cat	gga	gag	caa	tgc	cag	gaa	gac	tgc		1378	
Ile	Cys	Ser	Asn	Pro	Asn	Lys	His	Gly	Glu	Gln	Cys	Gln	Glu	Asp	Cys			
		390				395						400						
ggc	tgt	gtc	cat	ggg	ctc	tgc	gac	aac	cgc	cca	ggc	agt	ggg	ggg	gtg		1426	
Gly	Cys	Val	His	Gly	Leu	Cys	Asp	Asn	Arg	Pro	Gly	Ser	Gly	Gly	Val			
		405			410						415							
tgc	cag	cag	ggc	acg	tgt	gcc	cct	ggc	ttc	agt	ggc	cgg	ttc	tgc	aac		1474	
Cys	Gln	Gln	Gly	Thr	Cys	Ala	Pro	Gly	Phe	Ser	Gly	Arg	Phe	Cys	Asn			
420					425				430						435			
gag	tcc	atg	ggg	gac	tgt	ggg	ccc	aca	ggg	ctg	gcc	cag	cac	tgc	cac		1522	
Glu	Ser	Met	Gly	Asp	Cys	Gly	Pro	Thr	Gly	Leu	Ala	Gln	His	Cys	His			
			440						445					450				
ctg	cat	gcc	cgc	tgt	gtt	agc	cag	gag	ggg	gtt	gcc	aga	tgt	cgc	tgt		1570	

Leu	His	Ala	Arg	Cys	Val	Ser	Gln	Glu	Gly	Val	Ala	Arg	Cys	Arg	Cys		
			455					460					465				
ctt	gat	ggc	ttt	gag	ggg	gat	ggc	ttc	tcc	tgc	aca	cct	agc	aac	ccc	1618	
Leu	Asp	Gly	Phe	Glu	Gly	Asp	Gly	Phe	Ser	Cys	Thr	Pro	Ser	Asn	Pro		
		470					475					480					
tgc	tcc	cac	ccg	gac	cgt	gga	ggc	tgc	tca	gag	aat	gct	gag	tgt	gtc	1666	
Cys	Ser	His	Pro	Asp	Arg	Gly	Gly	Cys	Ser	Glu	Asn	Ala	Glu	Cys	Val		
		485				490					495						
cct	ggg	tcc	ctg	ggc	acc	cac	cac	tgc	aca	tgc	cac	aaa	ggc	tgg	agt	1714	
Pro	Gly	Ser	Leu	Gly	Thr	His	His	Cys	Thr	Cys	His	Lys	Gly	Trp	Ser		
500					505					510					515		
ggg	gat	ggc	cgc	gtc	tgt	gtg	gct	att	gac	gag	tgt	gag	ctg	gac	gtg	1762	
Gly	Asp	Gly	Arg	Val	Cys	Val	Ala	Ile	Asp	Glu	Cys	Glu	Leu	Asp	Val		
				520					525					530			
aga	ggg	ggc	tgc	cac	acc	gat	gcc	ctc	tgc	agc	tat	gtg	ggc	ccc	ggg	1810	
Arg	Gly	Gly	Cys	His	Thr	Asp	Ala	Leu	Cys	Ser	Tyr	Val	Gly	Pro	Gly		
			535					540					545				
cag	agc	cga	tgc	acc	tgc	aag	ctg	ggc	ttt	gcc	ggg	gat	ggc	tac	cag	1858	
Gln	Ser	Arg	Cys	Thr	Cys	Lys	Leu	Gly	Phe	Ala	Gly	Asp	Gly	Tyr	Gln		
		550					555					560					
tgc	agc	ccc	atc	gac	ccc	tgc	cgg	gca	ggc	aat	ggc	ggc	tgc	cac	ggc	1906	
Cys	Ser	Pro	Ile	Asp	Pro	Cys	Arg	Ala	Gly	Asn	Gly	Gly	Cys	His	Gly		
		565				570					575						
ctg	gag	ctg	gag	gca	aat	gcc	cac	ttc	tcc	atc	ttc	tac	caa	tgg	ctt	1954	
Leu	Glu	Leu	Glu	Ala	Asn	Ala	His	Phe	Ser	Ile	Phe	Tyr	Gln	Trp	Leu		
580					585					590					595		
aag	agt	gcc	ggc	atc	acg	ctt	cct	gcc	gac	cgc	cga	gtc	aca	gcc	ctg	2002	
Lys	Ser	Ala	Gly	Ile	Thr	Leu	Pro	Ala	Asp	Arg	Arg	Val	Thr	Ala	Leu		
				600					605					610			
gtg	ccc	tcc	gag	gct	gca	gtc	cgt	cag	ctg	agc	ccc	gag	gac	cga	gct	2050	
Val	Pro	Ser	Glu	Ala	Ala	Val	Arg	Gln	Leu	Ser	Pro	Glu	Asp	Arg	Ala		
			615				620					625					
ttc	tgg	ctg	cag	cca	agg	acg	ctg	ccg	aac	ctg	gtc	agg	gcc	cat	ttt	2098	
Phe	Trp	Leu	Gln	Pro	Arg	Thr	Leu	Pro	Asn	Leu	Val	Arg	Ala	His	Phe		
		630					635					640					
ctc	cag	ggg	gcc	ctc	ttc	gag	gag	gag	ctg	gcc	cgg	ctg	ggg	ggg	cag	2146	
Leu	Gln	Gly	Ala	Leu	Phe	Glu	Glu	Glu	Leu	Ala	Arg	Leu	Gly	Gly	Gln		
		645				650				655							
gaa	gtg	gcc	acc	ctg	aac	ccc	acc	aca	cgc	tgg	gag	att	cgc	aac	att	2194	
Glu	Val	Ala	Thr	Leu	Asn	Pro	Thr	Thr	Arg	Trp	Glu	Ile	Arg	Asn	Ile		
660					665					670					675		
agt	ggg	agg	gtc	tgg	gtg	cag	aat	gcc	agc	gtg	gat	gtg	gct	gac	ctc	2242	
Ser	Gly	Arg	Val	Trp	Val	Gln	Asn	Ala	Ser	Val	Asp	Val	Ala	Asp	Leu		
				680					685					690			
ctt	gcc	acc	aac	ggg	gtc	cta	cac	atc	ctc	agc	cag	gtc	tta	ctg	ccc	2290	
Leu	Ala	Thr	Asn	Gly	Val	Leu	His	Ile	Leu	Ser	Gln	Val	Leu	Leu	Pro		
			695					700				705					
ccc	cga	ggg	gat	gtg	ccc	ggg	ggg	cag	ggg	ttg	ctg	cag	cag	ctg	gac	2338	
Pro	Arg	Gly	Asp	Val	Pro	Gly	Gly	Gln	Gly	Leu	Leu	Gln	Gln	Leu	Asp		
		710				715						720					
ttg	gtg	cct	gcc	ttc	agc	ctc	ttc	cgg	gaa	ttg	ctg	cag	cac	cat	ggg	2386	

Leu	Val	Pro	Ala	Phe	Ser	Leu	Phe	Arg	Glu	Leu	Leu	Gln	His	His	Gly		
725						730				735							
ttg	gtg	ccc	cag	att	gag	gct	gcc	act	gcc	tac	acc	atc	ttt	gtg	ccc	2434	
Leu	Val	Pro	Gln	Ile	Glu	Ala	Ala	Thr	Ala	Tyr	Thr	Ile	Phe	Val	Pro		
740					745				750					755			
acc	aac	cgc	tcc	ctg	gag	gcc	cag	ggc	aac	agc	agt	cac	ctg	gac	gca	2482	
Thr	Asn	Arg	Ser	Leu	Glu	Ala	Gln	Gly	Asn	Ser	Ser	His	Leu	Asp	Ala		
				760				765						770			
gac	aca	gtg	cgg	cac	cat	gtg	gtc	ctg	ggg	gag	gcc	ctc	tcc	atg	gaa	2530	
Asp	Thr	Val	Arg	His	His	Val	Val	Leu	Gly	Glu	Ala	Leu	Ser	Met	Glu		
			775					780					785				
acc	ctg	cgg	aag	ggt	gga	cac	cgc	aac	tcc	ctc	ctg	ggc	cct	gcc	cac	2578	
Thr	Leu	Arg	Lys	Gly	Gly	His	Arg	Asn	Ser	Leu	Leu	Gly	Pro	Ala	His		
		790					795					800					
tgg	atc	gtc	ttc	tac	aac	cac	agt	ggc	cag	cct	gag	gtg	aac	cat	gtg	2626	
Trp	Ile	Val	Phe	Tyr	Asn	His	Ser	Gly	Gln	Pro	Glu	Val	Asn	His	Val		
	805					810					815						
cca	ctg	gaa	ggc	ccc	atg	ctg	gag	gcc	cct	ggc	cgc	tgc	ctg	att	ggt	2674	
Pro	Leu	Glu	Gly	Pro	Met	Leu	Glu	Ala	Pro	Gly	Arg	Ser	Leu	Ile	Gly		
	820				825					830					835		
ctg	tgc	ggg	gtc	ctg	acg	gtg	ggc	tca	agt	cgc	tgc	ctg	cat	agc	cac	2722	
Leu	Ser	Gly	Val	Leu	Thr	Val	Gly	Ser	Ser	Arg	Cys	Leu	His	Ser	His		
				840					845					850			
gct	gag	gcc	ctg	cgg	gag	aaa	tgt	gta	aac	tgc	acc	agg	aga	ttc	cgc	2770	
Ala	Glu	Ala	Leu	Arg	Glu	Lys	Cys	Val	Asn	Cys	Thr	Arg	Arg	Phe	Arg		
			855					860					865				
tgc	act	cag	ggc	ttc	cag	ctg	cag	gac	aca	ccc	agg	aag	agc	tgt	gtc	2818	
Cys	Thr	Gln	Gly	Phe	Gln	Leu	Gln	Asp	Thr	Pro	Arg	Lys	Ser	Cys	Val		
		870					875					880					
tac	cga	tct	ggc	ttc	tcc	ttc	tcc	cgg	ggc	tgc	tct	tac	aca	tgt	gcc	2866	
Tyr	Arg	Ser	Gly	Phe	Ser	Phe	Ser	Arg	Gly	Cys	Ser	Tyr	Thr	Cys	Ala		
		885				890					895						
aag	aag	atc	cag	gtg	ccg	gac	tgc	tgc	cct	ggt	ttc	ttt	ggc	acg	ctg	2914	
Lys	Lys	Ile	Gln	Val	Pro	Asp	Cys	Cys	Pro	Gly	Phe	Phe	Gly	Thr	Leu		
					905					910					915		
tgt	gag	cca	tgc	cca	ggg	ggt	cta	ggg	ggg	gtg	tgc	tca	ggc	cat	ggg	2962	
Cys	Glu	Pro	Cys	Pro	Gly	Gly	Leu	Gly	Gly	Val	Cys	Ser	Gly	His	Gly		
				920					925					930			
cag	tgc	cag	gac	agg	ttc	ctg	ggc	agc	ggg	gag	tgc	cac	tgc	cac	gag	3010	
Gln	Cys	Gln	Asp	Arg	Phe	Leu	Gly	Ser	Gly	Glu	Cys	His	Cys	His	Glu		
			935					940					945				
ggc	ttc	cat	gga	acg	gcc	tgt	gag	gtg	tgt	gag	ctg	ggc	cgc	tac	ggg	3058	
Gly	Phe	His	Gly	Thr	Ala	Cys	Glu	Val	Cys	Glu	Leu	Gly	Arg	Tyr	Gly		
		950					955					960					
ccc	aac	tgc	acc	gga	gtg	tgt	gac	tgt	gcc	cat	ggg	ctg	tgc	cag	gag	3106	
Pro	Asn	Cys	Thr	Gly	Val	Cys	Asp	Cys	Ala	His	Gly	Leu	Cys	Gln	Glu		
		965				970					975						
ggg	ctg	caa	ggg	gac	gga	agc	tgt	gtc	tgt	aac	gtg	ggc	tgg	cag	ggc	3154	
Gly	Leu	Gln	Gly	Asp	Gly	Ser	Cys	Val	Cys	Asn	Val	Gly	Trp	Gln	Gly		
				985						990					995		
ctc	cgc	tgt	gac	cag	aaa	atc	acc	agc	cct	cag	tgc	cct	agg	aag	tgc	3202	

Leu	Arg	Cys	Asp	Gln	Lys	Ile	Thr	Ser	Pro	Gln	Cys	Pro	Arg	Lys	Cys		
				1000					1005					1010			
gac	ccc	aat	gcc	aac	tgc	gtg	cag	gac	tcg	gcc	gga	gcc	tcc	acc	tgc	3250	
Asp	Pro	Asn	Ala	Asn	Cys	Val	Gln	Asp	Ser	Ala	Gly	Ala	Ser	Thr	Cys		
			1015					1020					1025				
gcc	tgt	gct	gcg	gga	tac	tcc	ggc	aat	ggc	atc	ttc	tgt	tca	gag	gtg	3298	
Ala	Cys	Ala	Ala	Gly	Tyr	Ser	Gly	Asn	Gly	Ile	Phe	Cys	Ser	Glu	Val		
		1030					1035					1040					
gac	ccc	tgc	gcc	cac	ggc	cat	ggg	ggc	tgc	tcc	cct	cat	gcc	aac	tgt	3346	
Asp	Pro	Cys	Ala	His	Gly	His	Gly	Gly	Cys	Ser	Pro	His	Ala	Asn	Cys		
		1045				1050				1055							
acc	aag	gtg	gca	cct	ggg	cag	cgg	aca	tgc	acc	tgc	cag	gat	ggc	tac	3394	
Thr	Lys	Val	Ala			Gln	Arg	Thr	Cys	Thr	Cys	Gln	Asp	Gly	Tyr		
1060					1065					1070					1075		
atg	ggc	gac	ggg	gag	ctg	tgc	cag	gaa	att	aac	agc	tgt	ctc	atc	cac	3442	
Met	Gly	Asp	Gly	Glu	Leu	Cys	Gln	Glu	Ile	Asn	Ser	Cys	Leu	Ile	His		
			1080						1085					1090			
cac	ggg	ggc	tgc	cac	att	cac	gcc	gag	tgc	atc	ccc	act	ggc	ccc	cag	3490	
His	Gly	Gly	Cys	His	Ile	His	Ala	Glu	Cys	Ile	Pro	Thr	Gly	Pro	Gln		
			1095					1100					1105				
cag	gtc	tcc	tgc	agc	tgc	cgt	gag	ggc	tac	agc	ggg	gat	ggc	atc	cgg	3538	
Gln	Val	Ser	Cys	Ser	Cys	Arg	Glu	Gly	Tyr	Ser	Gly	Asp	Gly	Ile	Arg		
		1110					1115					1120					
acc	tgc	gag	ctc	ctg	gac	ccc	tgc	tct	aag	aac	aat	gga	gga	tgc	agc	3586	
Thr	Cys	Glu	Leu	Leu	Asp	Pro	Cys	Ser	Lys	Asn	Asn	Gly	Gly	Cys	Ser		
		1125				1130					1135						
cca	tat	gcc	acc	tgc	aaa	agc	aca	ggg	gat	ggc	cag	agg	aca	tgt	acc	3634	
Pro	Tyr	Ala	Thr	Cys	Lys	Ser	Thr	Gly	Asp	Gly	Gln	Arg	Thr	Cys	Thr		
1140					1145					1150					1155		
tgc	gac	aca	gcc	cac	acc	gtg	ggg	gac	ggc	ctc	acc	tgc	cgt	gcc	cga	3682	
Cys	Asp	Thr	Ala	His	Thr	Val	Gly	Asp	Gly	Leu	Thr	Cys	Arg	Ala	Arg		
			1160					1165						1170			
gtc	ggc	ctg	gag	ctc	ctg	agg	gat	aag	cat	gcc	tca	ttc	ttc	agc	ctc	3730	
Val	Gly	Leu	Glu	Leu	Leu	Arg	Asp	Lys	His	Ala	Ser	Phe	Phe	Ser	Leu		
			1175					1180					1185				
cgc	ctc	ctg	gaa	tat	aag	gag	ctc	aag	ggc	gat	ggg	cct	ttc	acc	atc	3778	
Arg	Leu	Leu	Glu	Tyr	Lys	Glu	Leu	Lys	Gly	Asp	Gly	Pro	Phe	Thr	Ile		
			1190				1195					1200					
ttc	gtg	cgc	cac	gca	gat	cta	atg	agc	aac	ctg	tcg	cag	gat	gag	ctg	3826	
Phe	Val	Pro	His	Ala	Asp	Leu	Met	Ser	Asn	Leu	Ser	Gln	Asp	Glu	Leu		
		1205				1210						1215					
gcc	cgc	att	cgt	gcg	cat	cgc	cag	ctg	gtg	ttt	cgc	tac	cac	gtg	gtt	3874	
Ala	Arg	Ile	Arg	Ala	His	Arg	Gln	Leu	Val	Phe	Arg	Tyr	His	Val	Val		
1220					1225					1230					1235		
ggc	tgt	cgc	cgc	ctg	cgc	agc	gag	gac	ctg	ctg	gag	cag	ggg	tac	gcc	3922	
Gly	Cys	Arg	Arg	Leu	Arg	Ser	Glu	Asp	Leu	Leu	Glu	Gln	Gly	Tyr	Ala		
				1240				1245						1250			
acg	gcc	ctc	tca	ggg	cac	cca	ctg	cgc	ttc	agc	gag	agg	gag	ggc	agc	3970	
Thr	Ala	Leu	Ser	Gly	His	Pro	Leu	Arg	Phe	Ser	Glu	Arg	Glu	Gly	Ser		
			1255					1260					1265				
ata	tac	ctc	aat	gac	ttc	gcg	cgc	gtg	gtg	agc	agc	gac	cat	gag	gcc	4018	

Ile Tyr Leu Asn Asp Phe Ala Arg Val Val Ser Ser Asp His Glu Ala	
1270 1275 1280	
gtg aac ggc atc ctg cac ttc att gac cgt gtc ctg ctg ccc ccc gag	4066
Val Asn Gly Ile Leu His Phe Ile Asp Arg Val Leu Leu Pro Pro Glu	
1285 1290 1295	
gcg ctg cac tgg gag cct gat gat gct ccc atc ccg agg aga aat gtc	4114
Ala Leu His Trp Glu Pro Asp Asp Ala Pro Ile Pro Arg Arg Asn Val	
1300 1305 1310 1315	
acc gcc gcc gcc cag ggc ttc ggt tac aag atc ttc agc ggc ctc ctg	4162
Thr Ala Ala Ala Gln Gly Phe Gly Tyr Lys Ile Phe Ser Gly Leu Leu	
1320 1325 1330	
aag gtg gcc ggc ctc ctg ccc ctg ctt cga gag gca tcc cat agg ccc	4210
Lys Val Ala Gly Leu Leu Pro Leu Leu Arg Glu Ala Ser His Arg Pro	
1335 1340 1345	
ttc aca atg ctg tgg ccc aca gac gcc gcc ttt cga gct ctg cct ccg	4258
Phe Thr Met Leu Trp Pro Thr Asp Ala Ala Phe Arg Ala Leu Pro Pro	
1350 1355 1360	
gat cgc cag gcc tgg ctg tac cat gag gac cac cgt gac aag cta gca	4306
Asp Arg Gln Ala Trp Leu Tyr His Glu Asp His Arg Asp Lys Leu Ala	
1365 1370 1375	
gcc att ctg cgg ggc cac atg att cgc aat gtc gag gcc ttg gca tct	4354
Ala Ile Leu Arg Gly His Met Ile Arg Asn Val Glu Ala Leu Ala Ser	
1380 1385 1390 1395	
gac ctg ccc aac ctg ggc cca ctt cga acc atg cat ggg acc ccc atc	4402
Asp Leu Pro Asn Leu Gly Pro Leu Arg Thr Met His Gly Thr Pro Ile	
1400 1405 1410	
tct ttc tcc tgc agc cga acg cgg ccc ggt gag ctc atg gtg ggt gag	4450
Ser Phe Ser Cys Ser Arg Thr Arg Pro Gly Glu Leu Met Val Gly Glu	
1415 1420 1425	
gat gat gct cgc att gtg cag cgg cac ttg ccc ttt gag ggt ggc ctg	4498
Asp Asp Ala Arg Ile Val Gln Arg His Leu Pro Phe Glu Gly Gly Leu	
1430 1435 1440	
gcc tat ggc atc gac cag ctg ctg gag cca cct ggc ctt ggt gct cgc	4546
Ala Tyr Gly Ile Asp Gln Leu Leu Glu Pro Pro Gly Leu Gly Ala Arg	
1445 1450 1455	
tgt gac cac ttt gag acc cgg ccc ctg cga ctg aac acc tgc agc atc	4594
Cys Asp His Phe Glu Thr Arg Pro Leu Arg Leu Asn Thr Cys Ser Ile	
1460 1465 1470 1475	
tgt ggg ctg gag cca ccc tgt cct gag ggg tca cag gag cag ggc agc	4642
Cys Gly Leu Glu Pro Pro Cys Pro Glu Gly Ser Gln Glu Gln Gly Ser	
1480 1485 1490	
cct gag gcc tgc tgg cgc ttc tac ccg aag ttc tgg acg tcc cct ccg	4690
Pro Glu Ala Cys Trp Arg Phe Tyr Pro Lys Phe Trp Thr Ser Pro Pro	
1495 1500 1505	
ctg cac tct ttg gga tta cgc agc gtc tgg gtc cac ccc agc ctt tgg	4738
Leu His Ser Leu Gly Leu Arg Ser Val Trp Val His Pro Ser Leu Trp	
1510 1515 1520	
ggg agc ccc caa ggc ctg ggc agg ggc tgc cac cgc aat tgt gtc acc	4786
Gly Arg Pro Gln Gly Leu Gly Arg Gly Cys His Arg Asn Cys Val Thr	
1525 1530 1535	
acc acc tgg aag ccc agc tgc tgc cct ggt cac tat ggc agt gag tgc	4834

Thr Thr Trp Lys Pro Ser Cys Cys Pro Gly His Tyr Gly Ser Glu Cys	
1540 1545 1550 1555	
caa gct tgc cct ggc ggc ccc agc agc cct tgt agt gac cgt ggc gtg	4882
Gln Ala Cys Pro Gly Gly Pro Ser Ser Pro Cys Ser Asp Arg Gly Val	
1560 1565 1570	
tgc atg gac ggc atg agt ggc agt ggg cag tgt ctg tgc cgt tca ggt	4930
Cys Met Asp Gly Met Ser Gly Ser Gly Gln Cys Leu Cys Arg Ser Gly	
1575 1580 1585	
ttt gct ggg aca gcc tgt gaa ctc tgt gct cct ggt gcc ttt ggg ccc	4978
Phe Ala Gly Thr Ala Cys Glu Leu Cys Ala Pro Gly Ala Phe Gly Pro	
1590 1595 1600	
cat tgt caa gcc tgc cgc tgc act gtg cat ggc cgc tgt gat gag ggc	5026
His Cys Gln Ala Cys Arg Cys Thr Val His Gly Arg Cys Asp Glu Gly	
1605 1610 1615	
ctt ggg ggc tct ggc tcc tgc ttc tgt gat gaa ggc tgg act ggg cca	5074
Leu Gly Gly Ser Gly Ser Cys Phe Cys Asp Glu Gly Trp Thr Gly Pro	
1620 1625 1630 1635	
cgc tgt gag gtg caa ctg gag ctg cag cct gtg tgt acc cca ccc tgt	5122
Arg Cys Glu Val Gln Leu Glu Leu Gln Pro Val Cys Thr Pro Pro Cys	
1640 1645 1650	
gca ccc gag gct gtg tgc cgt gca ggc aac agc tgt gag tgc agc ctg	5170
Ala Pro Glu Ala Val Cys Arg Ala Gly Asn Ser Cys Glu Cys Ser Leu	
1655 1660 1665	
ggc tat gaa ggg gat ggc cgt gtg tgt aca gtg gca gac ctg tgc cag	5218
Gly Tyr Glu Gly Asp Gly Arg Val Cys Thr Val Ala Asp Leu Cys Gln	
1670 1675 1680	
gac ggg cat ggt ggc tgc agt gag cac gcc aac tgt agc cag gta gga	5266
Asp Gly His Gly Gly Cys Ser Glu His Ala Asn Cys Ser Gln Val Gly	
1685 1690 1695	
aca atg gtc act tgt acc tgc ctg ccc gac tac gag ggt gat ggc tgg	5314
Thr Met Val Thr Cys Thr Cys Leu Pro Asp Tyr Glu Gly Asp Gly Trp	
1700 1705 1710 1715	
agc tgc cgg gcc cgc aac ccc tgc aca gat ggc cac cgc ggg ggc tgc	5362
Ser Cys Arg Ala Arg Asn Pro Cys Thr Asp Gly His Arg Gly Gly Cys	
1720 1725 1730	
agc gag cac gcc aac tgc ttg agc acc ggc ctg aac aca cgg cgc tgt	5410
Ser Glu His Ala Asn Cys Leu Ser Thr Gly Leu Asn Thr Arg Arg Cys	
1735 1740 1745	
gag tgc cac gca ggc tac gta ggc gat gga ctg cag tgt ctg gag gag	5458
Glu Cys His Ala Gly Tyr Val Gly Asp Gly Leu Gln Cys Leu Glu Glu	
1750 1755 1760	
tcg gaa cca cct gtg gac cgc tgc ttg ggc cag cca ccg ccc tgc cac	5506
Ser Glu Pro Pro Val Asp Arg Cys Leu Gly Gln Pro Pro Pro Cys His	
1765 1770 1775	
tca gat gcc atg tgc act gac ctg cac ttc cag gag aaa cgg gct ggc	5554
Ser Asp Ala Met Cys Thr Asp Leu His Phe Gln Glu Lys Arg Ala Gly	
1780 1785 1790 1795	
gtt ttc cac ctc cag gcc acc agc ggc cct tat ggt ctg aac ttt tcg	5602
Val Phe His Leu Gln Ala Thr Ser Gly Pro Tyr Gly Leu Asn Phe Ser	
1800 1805 1810	
gag gct gag gcg gca tgc gaa gca cag gga gcc gtc ctt gct tca ttc	5650

Glu Ala Glu Ala Ala Cys Glu Ala Gln Gly Ala Val Leu Ala Ser Phe	
1815 1820 1825	
cct cag ctc tct gct gcc cag cag ctg ggc ttc cac ctg tgc ctc atg	5698
Pro Gln Leu Ser Ala Ala Gln Gln Leu Gly Phe His Leu Cys Leu Met	
1830 1835 1840	
ggc tgg ctg gcc aat ggc tcc act gcc cac cct gtg gtt ttc cct gtg	5746
Gly Trp Leu Ala Asn Gly Ser Thr Ala His Pro Val Val Phe Pro Val	
1845 1850 1855	
gcg gac tgt ggc aat ggt cgg gtg ggc ata gtc agc ctg ggt gcc cgc	5794
Ala Asp Cys Gly Asn Gly Arg Val Gly Ile Val Ser Leu Gly Ala Arg	
1860 1865 1870 1875	
aag aac ctc tca gaa cgc tgg gat gcc tac tgc ttc cgt gtg caa gat	5842
Lys Asn Leu Ser Glu Arg Trp Asp Ala Tyr Cys Phe Arg Val Gln Asp	
1880 1885 1890	
gtg gcc tgc cga tgc cga aat ggc ttc gtg ggt gac ggg atc agc acg	5890
Val Ala Cys Arg Cys Arg Asn Gly Phe Val Gly Asp Gly Ile Ser Thr	
1895 1900 1905	
tgc aat ggg aag ctg ctg gat gtg ctg gct gcc act gcc aac ttc tcc	5938
Cys Asn Gly Lys Leu Leu Asp Val Leu Ala Ala Thr Ala Asn Phe Ser	
1910 1915 1920	
acc ttc tat ggg atg cta ttg ggc tat gcc aat gcc acc cag cgg ggt	5986
Thr Phe Tyr Gly Met Leu Leu Gly Tyr Ala Asn Ala Thr Gln Arg Gly	
1925 1930 1935	
ctc gac ttc ctg gac ttc ctg gat gat gag ctc acg tat aag aca ctc	6034
Leu Asp Phe Leu Asp Phe Leu Asp Asp Glu Leu Thr Tyr Lys Thr Leu	
1940 1945 1950 1955	
ttc gtc cct gtc aat gaa ggc ttt gtg gac aac atg acg ctg agt ggc	6082
Phe Val Pro Val Asn Glu Gly Phe Val Asp Asn Met Thr Leu Ser Gly	
1960 1965 1970	
cca aac ttg gag ctg cat gcc tcc aac gcc acc ctc cta agt gcc aac	6130
Pro Asn Leu Glu Leu His Ala Ser Asn Ala Thr Leu Leu Ser Ala Asn	
1975 1980 1985	
gcc agc cag ggg aag ttg ctt ccg gcc cac tca ggc ctc agc ctc atc	6178
Ala Ser Gln Gly Lys Leu Leu Pro Ala His Ser Gly Leu Ser Leu Ile	
1990 1995 2000	
atc agt gac gca ggc cct gac aac agt tcc tgg gcc cct gtg gcc cca	6226
Ile Ser Asp Ala Gly Pro Asp Asn Ser Ser Trp Ala Pro Val Ala Pro	
2005 2010 2015	
ggg aca gtt gtg gtt agc cgt atc att gtg tgg gac atc atg gcc ttc	6274
Gly Thr Val Val Val Ser Arg Ile Ile Val Trp Asp Ile Met Ala Phe	
2020 2025 2030 2035	
aat ggc atc atc cat gct ctg gcc agc ccc ctc ctg gca ccc cca cag	6322
Asn Gly Ile Ile His Ala Leu Ala Ser Pro Leu Leu Ala Pro Pro Gln	
2040 2045 2050	
ccc cag gca gtg ctg gcg cnt gaa gcc cca cct gtg gcg gca ggc gtg	6370
Pro Gln Ala Val Leu Ala Xaa Glu Ala Pro Pro Val Ala Ala Gly Val	
2055 2060 2065	
ggg gct gtg ctt gcc gct gga gca ctg ctt ggc ttg gtg gcc gga gct	6418
Gly Ala Val Leu Ala Ala Gly Ala Leu Leu Gly Leu Val Ala Gly Ala	
2070 2075 2080	
ctc tac ctc cgt gcc cga ggc aag ccc atg ggc ttt ggc ttc tct gcc	6466

Leu Tyr Leu Arg Ala Arg Gly Lys Pro Met Gly Phe Gly Phe Ser Ala
 2085 2090 2095
 ttc cag gcg gaa gat gat gct gat gac gan ttc tca ccg tgg caa gaa 6514
 Phe Gln Ala Glu Asp Asp Ala Asp Asp Xaa Phe Ser Pro Trp Gln Glu
 2100 2105 2110 2115
 ggg acc aac ccc acn ttg gtn tnt gtc ccc aac cct gtc ttt ggc agc 6562
 Gly Thr Asn Pro Xaa Leu Xaa Xaa Val Pro Asn Pro Val Phe Gly Ser
 2120 2125 2130
 gac acc ttt tgt gaa ccc ttc gat gac tca ctg ctg gag gag gac ttc 6610
 Asp Thr Phe Cys Glu Pro Phe Asp Asp Ser Leu Leu Glu Glu Asp Phe
 2135 2140 2145
 cct gac acc cag agg atc ctc aca gtc aag tga cgaggctggg gctgaaagca 6663
 Pro Asp Thr Gln Arg Ile Leu Thr Val Lys
 2150 2155
 gaagcatgca cagggaggag accantttta ttgcttgtct ggggtggatgg ggcaggaggg 6723
 nctgagggcc tgtcccagac aatannngtn ccctcgag 6761

 <210> 2
 <211> 2157
 <212> PRT
 <213> Homo sapiens

 <220>
 <221> MISC_FEATURE
 <222> (2058)
 <223> Xaa equals any of the naturally occurring L-amino acids

 <220>
 <221> MISC_FEATURE
 <222> (2109)
 <223> Xaa equals any of the naturally occurring L-amino acids

 <220>
 <221> MISC_FEATURE
 <222> (2120)
 <223> Xaa equals any of the naturally occurring L-amino acids

 <220>
 <221> MISC_FEATURE
 <222> (2122)
 <223> Xaa equals any of the naturally occurring L-amino acids

 <220>
 <221> MISC_FEATURE
 <222> (2123)
 <223> Xaa equals any of the naturally occurring L-amino acids

 <400> 2
 Met Met Asp Gln Gly Cys Arg Glu Ile Leu Thr Thr Ala Gly Pro Phe
 1 5 10 15
 Thr Val Leu Val Pro Ser Val Ser Ser Phe Ser Ser Arg Thr Met Asn
 20 25 30
 Ala Ser Leu Ala Gln Gln Leu Cys Arg Gln His Ile Ile Ala Gly Gln
 35 40 45
 His Ile Leu Glu Asp Thr Arg Thr Gln Gln Thr Arg Arg Trp Trp Thr
 50 55 60
 Leu Ala Gly Gln Glu Ile Thr Val Thr Phe Asn Gln Phe Thr Lys Tyr

65					70					75				80	
Ser	Tyr	Lys	Tyr	Lys	Asp	Gln	Pro	Gln	Gln	Thr	Phe	Asn	Ile	Tyr	Lys
				85					90					95	
Ala	Asn	Asn	Ile	Ala	Ala	Asn	Gly	Val	Phe	His	Val	Val	Thr	Gly	Leu
			100					105					110		
Arg	Trp	Gln	Ala	Pro	Ser	Gly	Thr	Pro	Gly	Asp	Pro	Lys	Arg	Thr	Ile
		115					120					125			
Gly	Gln	Ile	Leu	Ala	Ser	Thr	Glu	Ala	Phe	Ser	Arg	Phe	Glu	Thr	Ile
		130				135					140				
Leu	Glu	Asn	Cys	Gly	Leu	Pro	Ser	Ile	Leu	Asp	Gly	Pro	Gly	Pro	Phe
145					150					155					160
Thr	Val	Phe	Ala	Pro	Ser	Asn	Glu	Ala	Val	Asp	Ser	Leu	Arg	Asp	Gly
				165					170					175	
Arg	Leu	Ile	Tyr	Leu	Phe	Thr	Ala	Gly	Leu	Ser	Lys	Leu	Gln	Glu	Leu
			180					185					190		
Val	Arg	Tyr	His	Ile	Tyr	Asn	His	Gly	Gln	Leu	Thr	Val	Glu	Lys	Leu
		195				200						205			
Ile	Ser	Lys	Gly	Arg	Ile	Leu	Thr	Met	Ala	Asn	Gln	Val	Leu	Ala	Val
		210				215					220				
Asn	Ile	Ser	Glu	Glu	Gly	Arg	Ile	Leu	Leu	Gly	Pro	Glu	Gly	Val	Pro
225					230					235					240
Leu	Gln	Arg	Val	Asp	Val	Met	Ala	Ala	Asn	Gly	Val	Ile	His	Met	Leu
				245					250					255	
Asp	Gly	Ile	Leu	Leu	Pro	Pro	Thr	Ile	Leu	Pro	Ile	Leu	Pro	Lys	His
			260					265					270		
Cys	Ser	Glu	Glu	Gln	His	Lys	Ile	Val	Ala	Gly	Ser	Cys	Val	Asp	Cys
		275				280						285			
Gln	Ala	Leu	Asn	Thr	Ser	Thr	Cys	Pro	Pro	Asn	Ser	Val	Lys	Leu	Asp
		290				295					300				
Ile	Phe	Pro	Lys	Glu	Cys	Val	Tyr	Ile	His	Asp	Pro	Thr	Gly	Leu	Asn
305					310					315					320
Val	Leu	Lys	Lys	Gly	Cys	Ala	Ser	Tyr	Cys	Asn	Gln	Thr	Ile	Met	Glu
				325					330					335	
Gln	Gly	Cys	Cys	Lys	Gly	Phe	Phe	Gly	Pro	Asp	Cys	Thr	Gln	Cys	Pro
				340				345					350		
Gly	Gly	Phe	Ser	Asn	Pro	Cys	Tyr	Gly	Lys	Gly	Asn	Cys	Ser	Asp	Gly
		355				360					365				
Ile	Gln	Gly	Asn	Gly	Ala	Cys	Leu	Cys	Phe	Pro	Asp	Tyr	Lys	Gly	Ile
		370				375					380				
Ala	Cys	His	Ile	Cys	Ser	Asn	Pro	Asn	Lys	His	Gly	Glu	Gln	Cys	Gln
385					390					395					400
Glu	Asp	Cys	Gly	Cys	Val	His	Gly	Leu	Cys	Asp	Asn	Arg	Pro	Gly	Ser
				405					410					415	
Gly	Gly	Val	Cys	Gln	Gln	Gly	Thr	Cys	Ala	Pro	Gly	Phe	Ser	Gly	Arg
			420					425					430		

Phe Cys Asn Glu Ser Met Gly Asp Cys Gly Pro Thr Gly Leu Ala Gln
435 440 445
His Cys His Leu His Ala Arg Cys Val Ser Gln Glu Gly Val Ala Arg
450 455 460
Cys Arg Cys Leu Asp Gly Phe Glu Gly Asp Gly Phe Ser Cys Thr Pro
465 470 475 480
Ser Asn Pro Cys Ser His Pro Asp Arg Gly Gly Cys Ser Glu Asn Ala
485 490 495
Glu Cys Val Pro Gly Ser Leu Gly Thr His His Cys Thr Cys His Lys
500 505 510
Gly Trp Ser Gly Asp Gly Arg Val Cys Val Ala Ile Asp Glu Cys Glu
515 520 525
Leu Asp Val Arg Gly Gly Cys His Thr Asp Ala Leu Cys Ser Tyr Val
530 535 540
Gly Pro Gly Gln Ser Arg Cys Thr Cys Lys Leu Gly Phe Ala Gly Asp
545 550 555 560
Gly Tyr Gln Cys Ser Pro Ile Asp Pro Cys Arg Ala Gly Asn Gly Gly
565 570 575
Cys His Gly Leu Glu Leu Glu Ala Asn Ala His Phe Ser Ile Phe Tyr
580 585 590
Gln Trp Leu Lys Ser Ala Gly Ile Thr Leu Pro Ala Asp Arg Arg Val
595 600 605
Thr Ala Leu Val Pro Ser Glu Ala Ala Val Arg Gln Leu Ser Pro Glu
610 615 620
Asp Arg Ala Phe Trp Leu Gln Pro Arg Thr Leu Pro Asn Leu Val Arg
625 630 635 640
Ala His Phe Leu Gln Gly Ala Leu Phe Glu Glu Glu Leu Ala Arg Leu
645 650 655
Gly Gly Gln Glu Val Ala Thr Leu Asn Pro Thr Thr Arg Trp Glu Ile
660 665 670
Arg Asn Ile Ser Gly Arg Val Trp Val Gln Asn Ala Ser Val Asp Val
675 680 685
Ala Asp Leu Leu Ala Thr Asn Gly Val Leu His Ile Leu Ser Gln Val
690 695 700
Leu Leu Pro Pro Arg Gly Asp Val Pro Gly Gly Gln Gly Leu Leu Gln
705 710 715 720
Gln Leu Asp Leu Val Pro Ala Phe Ser Leu Phe Arg Glu Leu Leu Gln
725 730 735
His His Gly Leu Val Pro Gln Ile Glu Ala Ala Thr Ala Tyr Thr Ile
740 745 750
Phe Val Pro Thr Asn Arg Ser Leu Glu Ala Gln Gly Asn Ser Ser His
755 760 765
Leu Asp Ala Asp Thr Val Arg His His Val Val Leu Gly Glu Ala Leu
770 775 780
Ser Met Glu Thr Leu Arg Lys Gly Gly His Arg Asn Ser Leu Leu Gly
785 790 795 800

Pro Ala His Trp Ile Val Phe Tyr Asn His Ser Gly Gln Pro Glu Val
 805 810 815
 Asn His Val Pro Leu Glu Gly Pro Met Leu Glu Ala Pro Gly Arg Ser
 820 825 830
 Leu Ile Gly Leu Ser Gly Val Leu Thr Val Gly Ser Ser Arg Cys Leu
 835 840 845
 His Ser His Ala Glu Ala Leu Arg Glu Lys Cys Val Asn Cys Thr Arg
 850 855 860
 Arg Phe Arg Cys Thr Gln Gly Phe Gln Leu Gln Asp Thr Pro Arg Lys
 865 870 875 880
 Ser Cys Val Tyr Arg Ser Gly Phe Ser Phe Ser Arg Gly Cys Ser Tyr
 885 890 895
 Thr Cys Ala Lys Lys Ile Gln Val Pro Asp Cys Cys Pro Gly Phe Phe
 900 905 910
 Gly Thr Leu Cys Glu Pro Cys Pro Gly Gly Leu Gly Gly Val Cys Ser
 915 920 925
 Gly His Gly Gln Cys Gln Asp Arg Phe Leu Gly Ser Gly Glu Cys His
 930 935 940
 Cys His Glu Gly Phe His Gly Thr Ala Cys Glu Val Cys Glu Leu Gly
 945 950 955 960
 Arg Tyr Gly Pro Asn Cys Thr Gly Val Cys Asp Cys Ala His Gly Leu
 965 970 975
 Cys Gln Glu Gly Leu Gln Gly Asp Gly Ser Cys Val Cys Asn Val Gly
 980 985 990
 Trp Gln Gly Leu Arg Cys Asp Gln Lys Ile Thr Ser Pro Gln Cys Pro
 995 1000 1005
 Arg Lys Cys Asp Pro Asn Ala Asn Cys Val Gln Asp Ser Ala Gly Ala
 1010 1015 1020
 Ser Thr Cys Ala Cys Ala Ala Gly Tyr Ser Gly Asn Gly Ile Phe Cys
 1025 1030 1035 1040
 Ser Glu Val Asp Pro Cys Ala His Gly His Gly Gly Cys Ser Pro His
 1045 1050 1055
 Ala Asn Cys Thr Lys Val Ala Pro Gly Gln Arg Thr Cys Thr Cys Gln
 1060 1065 1070
 Asp Gly Tyr Met Gly Asp Gly Glu Leu Cys Gln Glu Ile Asn Ser Cys
 1075 1080 1085
 Leu Ile His His Gly Gly Cys His Ile His Ala Glu Cys Ile Pro Thr
 1090 1095 1100
 Gly Pro Gln Gln Val Ser Cys Ser Cys Arg Glu Gly Tyr Ser Gly Asp
 1105 1110 1115 1120
 Gly Ile Arg Thr Cys Glu Leu Leu Asp Pro Cys Ser Lys Asn Asn Gly
 1125 1130 1135
 Gly Cys Ser Pro Tyr Ala Thr Cys Lys Ser Thr Gly Asp Gly Gln Arg
 1140 1145 1150
 Thr Cys Thr Cys Asp Thr Ala His Thr Val Gly Asp Gly Leu Thr Cys

1155	1160	1165
Arg Ala Arg Val Gly Leu Glu 1170	Leu Leu Arg Asp Lys His Ala Ser Phe 1175	
Phe Ser Leu Arg Leu Leu 1185	Glu Tyr Lys Glu Leu 1190	Lys Gly Asp Gly Pro 1195 1200
Phe Thr Ile Phe Val 1205	Pro His Ala Asp Leu 1210	Met Ser Asn Leu Ser Gln 1215
Asp Glu Leu Ala Arg Ile Arg Ala His 1220	Arg Gln Leu Val Phe Arg Tyr 1225 1230	
His Val Val Gly Cys Arg Arg Leu 1235	Arg Ser Glu Asp Leu Leu Glu Gln 1240 1245	
Gly Tyr Ala Thr Ala Leu Ser 1250	Gly His Pro Leu Arg Phe Ser Glu Arg 1255 1260	
Glu Gly Ser Ile Tyr Leu Asn Asp Phe Ala Arg 1265	Val Val Ser Ser Asp 1270 1275 1280	
His Glu Ala Val Asn Gly Ile Leu His Phe 1285	Ile Asp Arg Val Leu Leu 1290 1295	
Pro Pro Glu Ala Leu His Trp Glu Pro 1300	Asp Asp Ala Pro Ile Pro Arg 1305 1310	
Arg Asn Val Thr Ala Ala Ala Gln 1315	Gly Phe Gly Tyr Lys Ile Phe Ser 1320 1325	
Gly Leu Leu Lys Val Ala Gly Leu Leu Pro Leu Leu 1330	Arg Glu Ala Ser 1335 1340	
His Arg Pro Phe Thr Met Leu Trp Pro Thr 1345	Asp Ala Ala Phe Arg Ala 1350 1355 1360	
Leu Pro Pro Asp Arg Gln Ala Trp Leu Tyr 1365	His Glu Asp His Arg Asp 1370 1375	
Lys Leu Ala Ala Ile Leu Arg Gly His 1380	Met Ile Arg Asn Val Glu Ala 1385 1390	
Leu Ala Ser Asp Leu Pro Asn Leu 1395	Gly Pro Leu Arg Thr Met His Gly 1400 1405	
Thr Pro Ile Ser Phe Ser Cys Ser Arg Thr Arg 1410	Pro Gly Glu Leu Met 1415 1420	
Val Gly Glu Asp Asp Ala Arg Ile Val Gln Arg 1425	His Leu Pro Phe Glu 1430 1435 1440	
Gly Gly Leu Ala Tyr Gly Ile Asp Gln Leu 1445	Leu Glu Pro Pro Gly Leu 1450 1455	
Gly Ala Arg Cys Asp His Phe Glu Thr 1460	Arg Pro Leu Arg Leu Asn Thr 1465 1470	
Cys Ser Ile Cys Gly Leu Glu Pro 1475	Pro Cys Pro Glu Gly Ser Gln Glu 1480 1485	
Gln Gly Ser Pro Glu Ala Cys Trp Arg Phe Tyr 1490	Pro Lys Phe Trp Thr 1495 1500	
Ser Pro Pro Leu His Ser Leu Gly Leu Arg 1505	Ser Val Trp Val His Pro 1510 1515 1520	

Ser Leu Trp Gly Arg Pro Gln Gly Leu Gly Arg Gly Cys His Arg Asn
 1525 1530 1535
 Cys Val Thr Thr Thr Trp Lys Pro Ser Cys Cys Pro Gly His Tyr Gly
 1540 1545 1550
 Ser Glu Cys Gln Ala Cys Pro Gly Gly Pro Ser Ser Pro Cys Ser Asp
 1555 1560 1565
 Arg Gly Val Cys Met Asp Gly Met Ser Gly Ser Gly Gln Cys Leu Cys
 1570 1575 1580
 Arg Ser Gly Phe Ala Gly Thr Ala Cys Glu Leu Cys Ala Pro Gly Ala
 1585 1590 1595 1600
 Phe Gly Pro His Cys Gln Ala Cys Arg Cys Thr Val His Gly Arg Cys
 1605 1610 1615
 Asp Glu Gly Leu Gly Gly Ser Gly Ser Cys Phe Cys Asp Glu Gly Trp
 1620 1625 1630
 Thr Gly Pro Arg Cys Glu Val Gln Leu Glu Leu Gln Pro Val Cys Thr
 1635 1640 1645
 Pro Pro Cys Ala Pro Glu Ala Val Cys Arg Ala Gly Asn Ser Cys Glu
 1650 1655 1660
 Cys Ser Leu Gly Tyr Glu Gly Asp Gly Arg Val Cys Thr Val Ala Asp
 1665 1670 1675 1680
 Leu Cys Gln Asp Gly His Gly Gly Cys Ser Glu His Ala Asn Cys Ser
 1685 1690 1695
 Gln Val Gly Thr Met Val Thr Cys Thr Cys Leu Pro Asp Tyr Glu Gly
 1700 1705 1710
 Asp Gly Trp Ser Cys Arg Ala Arg Asn Pro Cys Thr Asp Gly His Arg
 1715 1720 1725
 Gly Gly Cys Ser Glu His Ala Asn Cys Leu Ser Thr Gly Leu Asn Thr
 1730 1735 1740
 Arg Arg Cys Glu Cys His Ala Gly Tyr Val Gly Asp Gly Leu Gln Cys
 1745 1750 1755 1760
 Leu Glu Glu Ser Glu Pro Pro Val Asp Arg Cys Leu Gly Gln Pro Pro
 1765 1770 1775
 Pro Cys His Ser Asp Ala Met Cys Thr Asp Leu His Phe Gln Glu Lys
 1780 1785 1790
 Arg Ala Gly Val Phe His Leu Gln Ala Thr Ser Gly Pro Tyr Gly Leu
 1795 1800 1805
 Asn Phe Ser Glu Ala Glu Ala Ala Cys Glu Ala Gln Gly Ala Val Leu
 1810 1815 1820
 Ala Ser Phe Pro Gln Leu Ser Ala Ala Gln Gln Leu Gly Phe His Leu
 1825 1830 1835 1840
 Cys Leu Met Gly Trp Leu Ala Asn Gly Ser Thr Ala His Pro Val Val
 1845 1850 1855
 Phe Pro Val Ala Asp Cys Gly Asn Gly Arg Val Gly Ile Val Ser Leu
 1860 1865 1870
 Gly Ala Arg Lys Asn Leu Ser Glu Arg Trp Asp Ala Tyr Cys Phe Arg
 1875 1880 1885

Val Gln Asp Val Ala Cys Arg Cys Arg Asn Gly Phe Val Gly Asp Gly
1890 1895 1900
Ile Ser Thr Cys Asn Gly Lys Leu Leu Asp Val Leu Ala Ala Thr Ala
1905 1910 1915 1920
Asn Phe Ser Thr Phe Tyr Gly Met Leu Leu Gly Tyr Ala Asn Ala Thr
1925 1930 1935
Gln Arg Gly Leu Asp Phe Leu Asp Phe Leu Asp Asp Glu Leu Thr Tyr
1940 1945 1950
Lys Thr Leu Phe Val Pro Val Asn Glu Gly Phe Val Asp Asn Met Thr
1955 1960 1965
Leu Ser Gly Pro Asn Leu Glu Leu His Ala Ser Asn Ala Thr Leu Leu
1970 1975 1980
Ser Ala Asn Ala Ser Gln Gly Lys Leu Leu Pro Ala His Ser Gly Leu
1985 1990 1995 2000
Ser Leu Ile Ile Ser Asp Ala Gly Pro Asp Asn Ser Ser Trp Ala Pro
2005 2010 2015
Val Ala Pro Gly Thr Val Val Val Ser Arg Ile Ile Val Trp Asp Ile
2020 2025 2030
Met Ala Phe Asn Gly Ile Ile His Ala Leu Ala Ser Pro Leu Leu Ala
2035 2040 2045
Pro Pro Gln Pro Gln Ala Val Leu Ala Xaa Glu Ala Pro Pro Val Ala
2050 2055 2060
Ala Gly Val Gly Ala Val Leu Ala Ala Gly Ala Leu Leu Gly Leu Val
2065 2070 2075 2080
Ala Gly Ala Leu Tyr Leu Arg Ala Arg Gly Lys Pro Met Gly Phe Gly
2085 2090 2095
Phe Ser Ala Phe Gln Ala Glu Asp Asp Ala Asp Asp Xaa Phe Ser Pro
2100 2105 2110
Trp Gln Glu Gly Thr Asn Pro Xaa Leu Xaa Xaa Val Pro Asn Pro Val
2115 2120 2125
Phe Gly Ser Asp Thr Phe Cys Glu Pro Phe Asp Asp Ser Leu Leu Glu
2130 2135 2140
Glu Asp Phe Pro Asp Thr Gln Arg Ile Leu Thr Val Lys
2145 2150 2155

<210> 3
<211> 193
<212> PRT
<213> Homo sapiens

<400> 3
Met Tyr Trp Asp Thr Gly Trp Gly Lys Asp Gly His Asn Ser Trp Arg
1 5 10 15
Ala Ala Gly Val Tyr His Arg Ala Arg Ser Gly Lys Tyr Lys Thr Tyr
20 25 30
Ala Ala Lys Ala Val Cys Gly Gly His Ala Thr Tyr Lys Ala Ala Arg
35 40 45

Lys Gly His Val Cys Ala Ala Gly Trp Met Ala Lys Gly Arg Val Gly
 50 55 60
 Tyr Val Lys Gly Asn Cys Gly Gly Lys Thr Gly Asp Tyr Gly Arg Asn
 65 70 75 80
 Arg Ser Arg Trp Asp Ala Tyr Cys Tyr Asn His Ala Lys Cys Gly Gly
 85 90 95
 Val Thr Asp Lys Arg Lys Ser Gly Asn Tyr Asp Asn Cys Tyr Trp His
 100 105 110
 Arg Lys Tyr Gly Arg His Ser Asp Asp Asp Asp Gly Cys Ala Asp Tyr
 115 120 125
 Val Tyr Asp Ser Tyr Asp Asp Val His Gly Val Gly Arg Tyr Cys Gly
 130 135 140
 Asp Asp Asp Ser Thr Gly Asn Val Met Thr Lys Ser Asp Ala Ser Val
 145 150 155 160
 Thr Ala Gly Gly Lys Tyr Val Ala Met Asp Val Ser Lys Ser Ser Gly
 165 170 175
 Lys Asn Thr Ser Thr Thr Ser Thr Gly Asn Lys Asn Ala Gly Arg Ser
 180 185 190

His

<210> 4
 <211> 1522
 <212> DNA
 <213> Homo sapiens

 <220>
 <221> CDS
 <222> (31)..(1404)

 <220>
 <221> misc_feature
 <222> (1103)
 <223> n equals a, t, g or c

 <220>
 <221> misc_feature
 <222> (1257)
 <223> n equals a, t, g or c

 <220>
 <221> misc_feature
 <222> (1290)
 <223> n equals a, t, g or c

 <220>
 <221> misc_feature
 <222> (1296)
 <223> n equals a, t, g or c

 <220>
 <221> misc_feature
 <222> (1298)
 <223> n equals a, t, g or c

 <220>
 <221> misc_feature
 <222> (1449)
 <223> n equals a, t, g or c

<220>
 <221> misc_feature
 <222> (1485)
 <223> n equals a, t, g or c

<220>
 <221> misc_feature
 <222> (1509)
 <223> n equals a, t, g or c

<220>
 <221> misc_feature
 <222> (1511)
 <223> n equals a, t, g or c

<220>
 <221> misc_feature
 <222> (1514)
 <223> n equals a, t, g or c

<400> 4
 gagcacgccca actgtagcca ggttaggaaca atg gtc act tgt acc tgc ctg ccc 54
 Met Val Thr Cys Thr Cys Leu Pro
 1 5

gac tac gag ggt gat ggc tgg agc tgc cgg gcc cgc aac ccc tgc aca 102
 Asp Tyr Glu Gly Asp Gly Trp Ser Cys Arg Ala Arg Asn Pro Cys Thr
 10 15 20

gat ggc cac cgc ggg ggc tgc agc gag cac gcc aac tgc ttg agc acc 150
 Asp Gly His Arg Gly Gly Cys Ser Glu His Ala Asn Cys Leu Ser Thr
 25 30 35 40

ggc ctg aac aca cgc cgc tgt gag tgc cac gca ggc tac gta ggc gat 198
 Gly Leu Asn Thr Arg Arg Cys Glu Cys His Ala Gly Tyr Val Gly Asp
 45 50 55

gga ctg cag tgt ctg gag gag tgc gaa cca cct gtg gac cgc tgc ttg 246
 Gly Leu Gln Cys Leu Glu Glu Ser Glu Pro Pro Val Asp Arg Cys Leu
 60 65 70

ggc cag cca ccg ccc tgc cac tca gat gcc atg tgc act gac ctg cac 294
 Gly Gln Pro Pro Pro Cys His Ser Asp Ala Met Cys Thr Asp Leu His
 75 80 85

ttc cag gag aaa cgc gct ggc gtt ttc cac ctc cag gcc acc agc ggc 342
 Phe Gln Glu Lys Arg Ala Gly Val Phe His Leu Gln Ala Thr Ser Gly
 90 95 100

cct tat ggt ctg aac ttt tgc gag gct gag gcg gca tgc gaa gca cag 390
 Pro Tyr Gly Leu Asn Phe Ser Glu Ala Glu Ala Cys Glu Ala Gln
 105 110 115 120

gga gcc gtc ctt gct tca ttc cct cag ctc tct gct gcc cag cag ctg 438
 Gly Ala Val Leu Ala Ser Phe Pro Gln Leu Ser Ala Ala Gln Gln Leu
 125 130 135

ggc ttc cac ctg tgc ctc atg ggc tgg ctg gcc aat ggc tcc act gcc 486
 Gly Phe His Leu Cys Leu Met Gly Trp Leu Ala Asn Gly Ser Thr Ala
 140 145 150

cac cct gtg gtt ttc cct gtg gcg gac tgt ggc aat ggt cgg gtg ggc 534
 His Pro Val Val Phe Pro Val Ala Asp Cys Gly Asn Gly Arg Val Gly
 155 160 165

ata gtc agc ctg ggt gcc cgc aag aac ctc tca gaa cgc tgg gat gcc 582
 Ile Val Ser Leu Gly Ala Arg Lys Asn Leu Ser Glu Arg Trp Asp Ala

170	175	180	
tac tgc ttc cgt gtg caa gat gtg gcc tgc cga tgc cga aat ggc ttc			630
Tyr Cys Phe Arg Val Gln Asp Val Ala Cys Arg Cys Arg Asn Gly Phe			
185	190	195	200
gtg ggt gac ggg atc agc acg tgc aat ggg aag ctg ctg gat gtg ctg			678
Val Gly Asp Gly Ile Ser Thr Cys Asn Gly Lys Leu Leu Asp Val Leu			
	205	210	215
gct gcc act gcc aac ttc tcc acc ttc tat ggg atg cta ttg ggc tat			726
Ala Ala Thr Ala Asn Phe Ser Thr Phe Tyr Gly Met Leu Leu Gly Tyr			
	220	225	230
gcc aat gcc acc cag cgg ggt ctc gac ttc ctg gac ttc ctg gat gat			774
Ala Asn Ala Thr Gln Arg Gly Leu Asp Phe Leu Asp Phe Leu Asp Asp			
	235	240	245
gag ctc acg tat aag aca ctc ttc gtc cct gtc aat gaa ggc ttt gtg			822
Glu Leu Thr Tyr Lys Thr Leu Phe Val Pro Val Asn Glu Gly Phe Val			
	250	255	260
gac aac atg acg ctg agt ggc cca aac ttg gag ctg cat gcc tcc aac			870
Asp Asn Met Thr Leu Ser Gly Pro Asn Leu Glu Leu His Ala Ser Asn			
	265	270	275
gcc acc ctc cta agt gcc aac gcc agc cag ggg aag ttg ctt ccg gcc			918
Ala Thr Leu Leu Ser Ala Asn Ala Ser Gln Gly Lys Leu Leu Pro Ala			
	285	290	295
cac tca ggc ctc agc ctc atc atc agt gac gca ggc cct gac aac agt			966
His Ser Gly Leu Ser Leu Ile Ile Ser Asp Ala Gly Pro Asp Asn Ser			
	300	305	310
tcc tgg gcc cct gtg gcc cca ggg aca gtt gtg gtt agc cgt atc att			1014
Ser Trp Ala Pro Val Ala Pro Gly Thr Val Val Val Ser Arg Ile Ile			
	315	320	325
gtg tgg gac atc atg gcc ttc aat ggc atc atc cat gct ctg gcc agc			1062
Val Trp Asp Ile Met Ala Phe Asn Gly Ile Ile His Ala Leu Ala Ser			
	330	335	340
ccc ctc ctg gca ccc cca cag ccc cag gca gtg ctg gcg cnt gaa gcc			1110
Pro Leu Leu Ala Pro Pro Gln Pro Gln Ala Val Leu Ala Xaa Glu Ala			
	345	350	355
cca cct gtg gcg gca ggc gtg ggg gct gtg ctt gcc gct gga gca ctg			1158
Pro Pro Val Ala Ala Gly Val Gly Ala Val Leu Ala Ala Gly Ala Leu			
	365	370	375
ctt ggc ttg gtg gcc gga gct ctc tac ctc cgt gcc cga ggc aag ccc			1206
Leu Gly Leu Val Ala Gly Ala Leu Tyr Leu Arg Ala Arg Gly Lys Pro			
	380	385	390
atg ggc ttt ggc ttc tct gcc ttc cag gcg gaa gat gat gct gat gac			1254
Met Gly Phe Gly Phe Ser Ala Phe Gln Ala Glu Asp Asp Ala Asp Asp			
	395	400	405
gan ttc tca ccg tgg caa gaa ggg acc aac ccc acn ttg gtn tnt gtc			1302
Xaa Phe Ser Pro Trp Gln Glu Gly Thr Asn Pro Xaa Leu Xaa Xaa Val			
	410	415	420
ccc aac cct gtc ttt ggc agc gac acc ttt tgt gaa ccc ttc gat gac			1350
Pro Asn Pro Val Phe Gly Ser Asp Thr Phe Cys Glu Pro Phe Asp Asp			
	425	430	435
tca ctg ctg gag gag gac ttc cct gac acc cag agg atc ctc aca gtc			1398
Ser Leu Leu Glu Glu Asp Phe Pro Asp Thr Gln Arg Ile Leu Thr Val			

445 450 455

aag tga cgaggctggg gctgaaagca gaagcatgca cagggaggag accantttta 1454
 Lys

ttgcttgctct ggggtggatgg ggcaggaggg nctgagggcc tgtcccagac aatannngtn 1514

ccctcgag 1522

<210> 5
 <211> 457
 <212> PRT
 <213> Homo sapiens

<220>
 <221> MISC_FEATURE
 <222> (358)
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>
 <221> MISC_FEATURE
 <222> (409)
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>
 <221> MISC_FEATURE
 <222> (420)
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>
 <221> MISC_FEATURE
 <222> (422)
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>
 <221> MISC_FEATURE
 <222> (423)
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 5
 Met Val Thr Cys Thr Cys Leu Pro Asp Tyr Glu Gly Asp Gly Trp Ser
 1 5 10 15

Cys Arg Ala Arg Asn Pro Cys Thr Asp Gly His Arg Gly Gly Cys Ser
 20 25 30

Glu His Ala Asn Cys Leu Ser Thr Gly Leu Asn Thr Arg Arg Cys Glu
 35 40 45

Cys His Ala Gly Tyr Val Gly Asp Gly Leu Gln Cys Leu Glu Glu Ser
 50 55 60

Glu Pro Pro Val Asp Arg Cys Leu Gly Gln Pro Pro Pro Cys His Ser
 65 70 75 80

Asp Ala Met Cys Thr Asp Leu His Phe Gln Glu Lys Arg Ala Gly Val
 85 90 95

Phe His Leu Gln Ala Thr Ser Gly Pro Tyr Gly Leu Asn Phe Ser Glu
 100 105 110

Ala Glu Ala Ala Cys Glu Ala Gln Gly Ala Val Leu Ala Ser Phe Pro
 115 120 125

Gln Leu Ser Ala Ala Gln Gln Leu Gly Phe His Leu Cys Leu Met Gly
 130 135 140

Trp Leu Ala Asn Gly Ser Thr Ala His Pro Val Val Phe Pro Val Ala
 145 150 155 160
 Asp Cys Gly Asn Gly Arg Val Gly Ile Val Ser Leu Gly Ala Arg Lys
 165 170 175
 Asn Leu Ser Glu Arg Trp Asp Ala Tyr Cys Phe Arg Val Gln Asp Val
 180 185 190
 Ala Cys Arg Cys Arg Asn Gly Phe Val Gly Asp Gly Ile Ser Thr Cys
 195 200 205
 Asn Gly Lys Leu Leu Asp Val Leu Ala Ala Thr Ala Asn Phe Ser Thr
 210 215 220
 Phe Tyr Gly Met Leu Leu Gly Tyr Ala Asn Ala Thr Gln Arg Gly Leu
 225 230 235 240
 Asp Phe Leu Asp Phe Leu Asp Asp Glu Leu Thr Tyr Lys Thr Leu Phe
 245 250 255
 Val Pro Val Asn Glu Gly Phe Val Asp Asn Met Thr Leu Ser Gly Pro
 260 265 270
 Asn Leu Glu Leu His Ala Ser Asn Ala Thr Leu Leu Ser Ala Asn Ala
 275 280 285
 Ser Gln Gly Lys Leu Leu Pro Ala His Ser Gly Leu Ser Leu Ile Ile
 290 295 300
 Ser Asp Ala Gly Pro Asp Asn Ser Ser Trp Ala Pro Val Ala Pro Gly
 305 310 315 320
 Thr Val Val Val Ser Arg Ile Ile Val Trp Asp Ile Met Ala Phe Asn
 325 330 335
 Gly Ile Ile His Ala Leu Ala Ser Pro Leu Leu Ala Pro Pro Gln Pro
 340 345 350
 Gln Ala Val Leu Ala Xaa Glu Ala Pro Pro Val Ala Ala Gly Val Gly
 355 360 365
 Ala Val Leu Ala Ala Gly Ala Leu Leu Gly Leu Val Ala Gly Ala Leu
 370 375 380
 Tyr Leu Arg Ala Arg Gly Lys Pro Met Gly Phe Gly Phe Ser Ala Phe
 385 390 395 400
 Gln Ala Glu Asp Asp Ala Asp Asp Xaa Phe Ser Pro Trp Gln Glu Gly
 405 410 415
 Thr Asn Pro Xaa Leu Xaa Xaa Val Pro Asn Pro Val Phe Gly Ser Asp
 420 425 430
 Thr Phe Cys Glu Pro Phe Asp Asp Ser Leu Leu Glu Glu Asp Phe Pro
 435 440 445
 Asp Thr Gln Arg Ile Leu Thr Val Lys
 450 455

 <210> 6
 <211> 193
 <212> PRT
 <213> Homo sapiens

 <400> 6
 Met Tyr Trp Asp Thr Gly Trp Gly Lys Asp Gly His Asn Ser Trp Arg

1	5	10	15
Ala Ala Gly Val Tyr His Arg Ala Arg Ser Gly Lys Tyr Lys Thr Tyr	20	25	30
Ala Ala Lys Ala Val Cys Gly Gly His Ala Thr Tyr Lys Ala Ala Arg	35	40	45
Lys Gly His Val Cys Ala Ala Gly Trp Met Ala Lys Gly Arg Val Gly	50	55	60
Tyr Val Lys Gly Asn Cys Gly Gly Lys Thr Gly Asp Tyr Gly Arg Asn	65	70	75
Arg Ser Arg Trp Asp Ala Tyr Cys Tyr Asn His Ala Lys Cys Gly Gly	85	90	95
Val Thr Asp Lys Arg Lys Ser Gly Asn Tyr Asp Asn Cys Tyr Trp His	100	105	110
Arg Lys Tyr Gly Arg His Ser Asp Asp Asp Asp Gly Cys Ala Asp Tyr	115	120	125
Val Tyr Asp Ser Tyr Asp Asp Val His Gly Val Gly Arg Tyr Cys Gly	130	135	140
Asp Asp Asp Ser Thr Gly Asn Val Met Thr Lys Ser Asp Ala Ser Val	145	150	155
Thr Ala Gly Gly Lys Tyr Val Ala Met Asp Val Ser Lys Ser Ser Gly	165	170	175
Lys Asn Thr Ser Thr Thr Ser Thr Gly Asn Lys Asn Ala Gly Arg Ser	180	185	190

His

<210> 7
 <211> 985
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (118)..(984)

<220>
 <221> misc_feature
 <222> (36)
 <223> n equals a, t, g or c

<220>
 <221> misc_feature
 <222> (51)
 <223> n equals a, t, g or c

<220>
 <221> misc_feature
 <222> (248)
 <223> n equals a, t, g or c

<220>
 <221> misc_feature
 <222> (508)
 <223> n equals a, t, g or c

<220>

```

<221> misc_feature
<222> (521)
<223> n equals a, t, g or c

<220>
<221> misc_feature
<222> (564)
<223> n equals a, t, g or c

<220>
<221> misc_feature
<222> (933)
<223> n equals a, t, g or c

<220>
<221> misc_feature
<222> (945)
<223> n equals a, t, g or c

<220>
<221> misc_feature
<222> (951)
<223> n equals a, t, g or c

<220>
<221> misc_feature
<222> (958)
<223> n equals a, t, g or c

<400> 7
gcccacgcgt ccgaccggga cagctcgcg ccccnagag ctctagccgt ngaggagctg 60

cctggggacg tttgccctgg ggccccagcc tggcccggt caccctggca tgaggag 117

atg ggc ctg ttg ctc ctg gtc cca ttg ctc ctg ctg ccc ggc tcc tac 165
Met Gly Leu Leu Leu Leu Val Pro Leu Leu Leu Leu Pro Gly Ser Tyr
1 5 10 15

gga ctg ccc ttc tac tac ggc ttc tac tac tcc aac agc gcc aac gac 213
Gly Leu Pro Phe Tyr Tyr Gly Phe Tyr Tyr Ser Asn Ser Ala Asn Asp
20 25 30

cag aac cta ggc aac ggt cat ggc aaa gac cta cnt aat gga gtg aag 261
Gln Asn Leu Gly Asn Gly His Gly Lys Asp Leu Xaa Asn Gly Val Lys
35 40 45

ctg gtg gtg gag aca ccc gag gag acc ctg ttc acc tac caa ggg gcc 309
Leu Val Val Glu Thr Pro Glu Glu Thr Leu Phe Thr Tyr Gln Gly Ala
50 55 60

agt gtg atc ctg ccc tgc cgc tac cgc tac gag ccg gcc ctg gtc tcc 357
Ser Val Ile Leu Pro Cys Arg Tyr Arg Tyr Glu Pro Ala Leu Val Ser
65 70 75 80

ccg cgg cgt gtg cgt gtc aaa tgg tgg aag ctg tcg gag aac ggg gcc 405
Pro Arg Arg Val Arg Val Lys Trp Trp Lys Leu Ser Glu Asn Gly Ala
85 90 95

cca gag aag gac gtg ctg gtg gcc atc ggg ctg agg cac cgc tcc ttt 453
Pro Glu Lys Asp Val Leu Val Ala Ile Gly Leu Arg His Arg Ser Phe
100 105 110

ggg gac tac caa ggc cgc gtg cac ctg cgg cag gac aaa gag cat gac 501
Gly Asp Tyr Gln Gly Arg Val His Leu Arg Gln Asp Lys Glu His Asp
115 120 125

gtc tcg ntg gag atc cag gnt ctg cgg ctg gag gac tat ggg cgt tac 549
Val Ser Xaa Glu Ile Gln Xaa Leu Arg Leu Glu Asp Tyr Gly Arg Tyr

```

130	135	140	
cgc tgt gag gtc atn gac ggg ctg gag gat gaa agc ggt ctg gtg gag			597
Arg Cys Glu Val Xaa Asp Gly Leu Glu Asp Glu Ser Gly Leu Val Glu			
145	150	155	160
ctg gag ctg cgg ggt gtg gtc ttt cct tac cag tcc ccc aac ggg cgc			645
Leu Glu Leu Arg Gly Val Val Phe Pro Tyr Gln Ser Pro Asn Gly Arg			
	165	170	175
tac cag ttc aac ttc cac gag ggc cag cag gtc tgt gca gag cag gct			693
Tyr Gln Phe Asn Phe His Glu Gly Gln Gln Val Cys Ala Glu Gln Ala			
	180	185	190
gcg gtg gtg gcc tcc ttt gag cag ctc ttc cgg gcc tgg gag gag ggc			741
Ala Val Val Ala Ser Phe Glu Gln Leu Phe Arg Ala Trp Glu Glu Gly			
	195	200	205
ctg gac tgg tgc aac gcg ggc tgg ctg cag gat gcc acg gtg cag tac			789
Leu Asp Trp Cys Asn Ala Gly Trp Leu Gln Asp Ala Thr Val Gln Tyr			
	210	215	220
ccc atc atg ttg ccc cgg cag ccc tgc ggt ggc ccg gac ctg gca cct			837
Pro Ile Met Leu Pro Arg Gln Pro Cys Gly Gly Pro Asp Leu Ala Pro			
	225	230	235
ggc gtg cga agc tac ggc ccc cgc cac cgc cgc ctg cac cgc tat gat			885
Gly Val Arg Ser Tyr Gly Pro Arg His Arg Arg Leu His Arg Tyr Asp			
	245	250	255
gta ttc tgc ttc gct act gcc ctc arg ggg cgg gtg tac tac ctg gan			933
Val Phe Cys Phe Ala Thr Ala Leu Xaa Gly Arg Val Tyr Tyr Leu Xaa			
	260	265	270
cac cct gag aan ctg acn ctg aca naa gca agg gaa gcc tgc caa gaa			981
His Pro Glu Xaa Leu Xaa Leu Thr Xaa Ala Arg Glu Ala Cys Gln Glu			
	275	280	285
aaa t			985
Lys			

<210> 8

<211> 289

<212> PRT

<213> Homo sapiens

<220>

<221> MISC_FEATURE

<222> (44)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> MISC_FEATURE

<222> (131)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> MISC_FEATURE

<222> (135)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> MISC_FEATURE

<222> (149)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>


```

<221> MISC_FEATURE
<222> (265)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> MISC_FEATURE
<222> (272)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> MISC_FEATURE
<222> (276)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> MISC_FEATURE
<222> (278)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> MISC_FEATURE
<222> (281)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 8
Met Gly Leu Leu Leu Val Pro Leu Leu Leu Pro Gly Ser Tyr
  1             5             10             15

Gly Leu Pro Phe Tyr Tyr Gly Phe Tyr Tyr Ser Asn Ser Ala Asn Asp
      20             25             30

Gln Asn Leu Gly Asn Gly His Gly Lys Asp Leu Xaa Asn Gly Val Lys
      35             40             45

Leu Val Val Glu Thr Pro Glu Glu Thr Leu Phe Thr Tyr Gln Gly Ala
      50             55             60

Ser Val Ile Leu Pro Cys Arg Tyr Arg Tyr Glu Pro Ala Leu Val Ser
      65             70             75             80

Pro Arg Arg Val Arg Val Lys Trp Trp Lys Leu Ser Glu Asn Gly Ala
      85             90             95

Pro Glu Lys Asp Val Leu Val Ala Ile Gly Leu Arg His Arg Ser Phe
      100            105            110

Gly Asp Tyr Gln Gly Arg Val His Leu Arg Gln Asp Lys Glu His Asp
      115            120            125

Val Ser Xaa Glu Ile Gln Xaa Leu Arg Leu Glu Asp Tyr Gly Arg Tyr
      130            135            140

Arg Cys Glu Val Xaa Asp Gly Leu Glu Asp Glu Ser Gly Leu Val Glu
      145            150            155            160

Leu Glu Leu Arg Gly Val Val Phe Pro Tyr Gln Ser Pro Asn Gly Arg
      165            170            175

Tyr Gln Phe Asn Phe His Glu Gly Gln Gln Val Cys Ala Glu Gln Ala
      180            185            190

Ala Val Val Ala Ser Phe Glu Gln Leu Phe Arg Ala Trp Glu Glu Gly
      195            200            205

Leu Asp Trp Cys Asn Ala Gly Trp Leu Gln Asp Ala Thr Val Gln Tyr
      210            215            220

Pro Ile Met Leu Pro Arg Gln Pro Cys Gly Gly Pro Asp Leu Ala Pro

```

225 230 235 240
 Gly Val Arg Ser Tyr Gly Pro Arg His Arg Arg Leu His Arg Tyr Asp
 245 250 255
 Val Phe Cys Phe Ala Thr Ala Leu Xaa Gly Arg Val Tyr Tyr Leu Xaa
 260 265 270
 His Pro Glu Xaa Leu Xaa Leu Thr Xaa Ala Arg Glu Ala Cys Gln Glu
 275 280 285

Lys

<210> 9
 <211> 355
 <212> PRT
 <213> Homo sapiens

<400> 9
 Met Thr Ser Leu Leu Phe Leu Val Leu Ile Ser Val Cys Trp Ala Glu
 1 5 10 15
 Pro His Pro Asp Asn Ser Ser Leu Glu His Glu Arg Ile Ile His Ile
 20 25 30
 Gln Glu Glu Asn Gly Pro Arg Leu Leu Val Val Ala Glu Gln Ala Lys
 35 40 45
 Ile Phe Ser Gln Arg Gly Gly Asn Val Thr Leu Pro Cys Lys Phe Tyr
 50 55 60
 His Glu His Thr Ser Thr Ala Gly Ser Gly Thr His Lys Ile Arg Val
 65 70 75 80
 Lys Trp Thr Lys Leu Thr Ser Asp Tyr Leu Lys Glu Val Asp Val Phe
 85 90 95
 Val Ala Met Gly His His Arg Lys Ser Tyr Gly Lys Tyr Gln Gly Arg
 100 105 110
 Val Phe Leu Arg Glu Ser Ser Glu Asn Asp Ala Ser Leu Ile Ile Thr
 115 120 125
 Asn Ile Met Leu Glu Asp Tyr Gly Arg Tyr Lys Cys Glu Val Ile Glu
 130 135 140
 Gly Leu Glu Asp Asp Thr Ala Val Val Ala Leu Asn Leu Glu Gly Val
 145 150 155 160
 Val Phe Pro Tyr Ser Pro Arg Leu Gly Arg Tyr Asn Leu Asn Phe His
 165 170 175
 Glu Ala Gln Gln Ala Cys Leu Asp Gln Asp Ser Ile Ile Ala Ser Phe
 180 185 190
 Asp Gln Leu Tyr Glu Ala Trp Arg Ser Gly Leu Asp Trp Cys Asn Ala
 195 200 205
 Gly Trp Leu Ser Asp Gly Ser Val Gln Tyr Pro Ile Thr Lys Pro Arg
 210 215 220
 Glu Pro Cys Gly Gly Lys Asn Thr Val Pro Gly Val Arg Asn Tyr Gly
 225 230 235 240
 Phe Trp Asp Lys Glu Arg Ser Arg Tyr Asp Val Phe Cys Phe Thr Ser
 245 250 255

Asn Phe Asn Gly Arg Phe Tyr Tyr Leu Ile His Pro Thr Lys Leu Thr
 260 265 270
 Tyr Asp Glu Ala Val Gln Ala Cys Leu Lys Asp Gly Ala Gln Ile Ala
 275 280 285
 Lys Val Gly Gln Ile Phe Ala Ala Trp Lys Leu Leu Gly Tyr Asp Arg
 290 295 300
 Cys Asp Ala Gly Trp Leu Ala Asp Gly Ser Val Arg Tyr Pro Ile Ser
 305 310 315 320
 Arg Pro Arg Lys Arg Cys Ser Pro Asn Glu Ala Ala Val Arg Phe Val
 325 330 335
 Gly Phe Pro Asp Lys Lys His Lys Leu Tyr Gly Val Tyr Cys Phe Arg
 340 345 350
 Ala Tyr Asn
 355

<210> 10
 <211> 1259
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (199)..(1257)

<220>
 <221> misc_feature
 <222> (478)

<220>
 <221> misc_feature
 <222> (668)
 <223> n equals a, t, g or c

<220>
 <221> misc_feature
 <222> (849)
 <223> n equals a, t, g or c

<220>
 <221> misc_feature
 <222> (1138)
 <223> n equals a, t, g or c

<220>
 <221> misc_feature
 <222> (1149)
 <223> n equals a, t, g or c

<220>
 <221> misc_feature
 <222> (1157)
 <223> n equals a, t, g or c

<220>
 <221> misc_feature
 <222> (1169)
 <223> n equals a, t, g or c

<220>
 <221> misc_feature
 <222> (1172)
 <223> n equals a, t, g or c

```

<220>
<221> misc_feature
<222> (1169)
<223> n equals a, t, g or c

<220>
<221> misc_feature
<222> (1172)
<223> n equals a, t, g or c

<220>
<221> misc_feature
<222> (1251)
<223> n equals a, t, g or c

<400> 10
ggaatcacat gcacagttgt ggatttctgtc aaacaggaca acgggggctg tgcaaagggtg 60

gccagatgct cccagaagggtg cacgaagggtc tcctgcagct gccagaagggtg atacaaagggtg 120

gacggggcaca gctgcacaga gatagacccc tgtgcagacg gccttaacgg aggggtgtcac 180

gagcacgcca cctgtaag atg aca ggc ccg ggc aag cac aag tgt gag tgt 231
          Met Thr Gly Pro Gly Lys His Lys Cys Glu Cys
              1              5              10

aaa agt cac tat gtc gga gat ggg ctg aac tgt gag ccg gag cag ctg 279
Lys Ser His Tyr Val Gly Asp Gly Leu Asn Cys Glu Pro Glu Gln Leu
              15              20              25

ccc att gac cgc tgc tta cag gac aat ggg cag tgc cat gca gac gcc 327
Pro Ile Asp Arg Cys Leu Gln Asp Asn Gly Gln Cys His Ala Asp Ala
              30              35              40

aaa tgt gtc gac ctc cac ttc cag gat acc act gtt ggg gtg ttc cat 375
Lys Cys Val Asp Leu His Phe Gln Asp Thr Thr Val Gly Val Phe His
              45              50              55

cta cgc tcc cca ctg ggc cag tat aag ctg acc ttt gac aaa gcc aga 423
Leu Arg Ser Pro Leu Gly Gln Tyr Lys Leu Thr Phe Asp Lys Ala Arg
              60              65              70              75

gag gcc tgt gcc aac gaa gct gcg acc atg gca acc tac aac cag ctc 471
Glu Ala Cys Ala Asn Glu Ala Ala Thr Met Ala Thr Tyr Asn Gln Leu
              80              85              90

tcc tat nnc cag aag gcc aag tac cac ctg tgc tca gca ggc tgg ctg 519
Ser Tyr Xaa Gln Lys Ala Lys Tyr His Leu Cys Ser Ala Gly Trp Leu
              95              100              105

gag acc ggg cgg gtt gcc tac ccc aca gcc ttc gcc tcc cag aac tgt 567
Glu Thr Gly Arg Val Ala Tyr Pro Thr Ala Phe Ala Ser Gln Asn Cys
              110              115              120

ggc tct ggt gtg gtt ggg ata gtg gac tat gga cct aga ccc aac aag 615
Gly Ser Gly Val Val Gly Ile Val Asp Tyr Gly Pro Arg Pro Asn Lys
              125              130              135

agt gaa atg tgg gat gtc ttc tgc tat cgg atg aaa gat gtg aac tgc 663
Ser Glu Met Trp Asp Val Phe Cys Tyr Arg Met Lys Asp Val Asn Cys
              140              145              150              155

acc tnc aag gtg ggc tat gtg gga gat ggc ttc tca tac agt ggg aac 711
Thr Xaa Lys Val Gly Tyr Val Gly Asp Gly Phe Ser Tyr Ser Gly Asn
              160              165              170

ctg ctg cag gtc ctg atg tcc ttc ccc tca ctc aca aac ttc ctg acg 759

```

Leu	Leu	Gln	Val	Leu	Met	Ser	Phe	Pro	Ser	Leu	Thr	Asn	Phe	Leu	Thr		
			175					180					185				
gaa	gtg	ctg	gcc	tat	tcc	aac	agc	tca	gct	cga	ggc	cgt	gca	ttt	cta	807	
Glu	Val	Leu	Ala	Tyr	Ser	Asn	Ser	Ser	Ala	Arg	Gly	Arg	Ala	Phe	Leu		
		190					195					200					
gaa	cac	ctg	act	gac	ctg	tcc	atc	cgc	ggc	acc	ctc	ttt	gtn	cca	cag	855	
Glu	His	Leu	Thr	Asp	Leu	Ser	Ile	Arg	Gly	Thr	Leu	Phe	Val	Pro	Gln		
	205					210					215						
aac	agt	ggg	ctg	ggg	gag	aat	gag	acc	ttg	tct	ggg	cgg	gac	atc	gag	903	
Asn	Ser	Gly	Leu	Gly	Glu	Asn	Glu	Thr	Leu	Ser	Gly	Arg	Asp	Ile	Glu		
220					225				230					235			
cac	cac	ctc	gcc	aat	gtc	agc	atg	ttt	ttc	tac	aat	gac	ctt	gtc	aat	951	
His	His	Leu	Ala	Asn	Val	Ser	Met	Phe	Phe	Tyr	Asn	Asp	Leu	Val	Asn		
				240					245					250			
ggc	acc	acc	ctg	caa	acg	agg	ctg	gga	agc	aag	ctg	ctc	atc	act	gac	999	
Gly	Thr	Thr	Leu	Gln	Thr	Arg	Leu	Gly	Ser	Lys	Leu	Leu	Ile	Thr	Asp		
		255					260						265				
aga	cag	gac	cca	ctc	cac	ccg	acg	gag	acc	agg	tgt	gtt	gat	gga	aga	1047	
Arg	Gln	Asp	Pro	Leu	His	Pro	Thr	Glu	Thr	Arg	Cys	Val	Asp	Gly	Arg		
		270					275					280					
gac	act	ctg	gag	tgg	gac	atc	tgt	gcc	tcc	aat	ggg	atc	aca	cat	gtc	1095	
Asp	Thr	Leu	Glu	Trp	Asp	Ile	Cys	Ala	Ser	Asn	Gly	Ile	Thr	His	Val		
	285					290					295						
att	tcc	agg	yct	tta	aaa	gca	ccc	cct	gcc	ccc	gtg	acc	ttg	ncc	cac	1143	
Ile	Ser	Arg	Xaa	Leu	Lys	Ala	Pro	Pro	Ala	Pro	Val	Thr	Leu	Xaa	His		
300					305					310				315			
act	ggn	ttg	gga	gna	ggg	atc	ttc	tnt	gnc	atc	atc	ctg	gtg	act	ggg	1191	
Thr	Gly	Leu	Gly	Xaa	Gly	Ile	Phe	Xaa	Xaa	Ile	Ile	Leu	Val	Thr	Gly		
				320				325						330			
gct	gtt	gcc	ttg	gct	gct	tac	tcc	tac	ttt	cgg	ata	aac	cgg	aaa	aca	1239	
Ala	Val	Ala	Leu	Ala	Ala	Tyr	Ser	Tyr	Phe	Arg	Ile	Asn	Arg	Lys	Thr		
		335					340					345					
atc	ggc	ttc	can	cat	ttt	ga										1259	
Ile	Gly	Phe	Xaa	His	Phe												
		350															

<210> 11

<211> 353

<212> PRT

<213> Homo sapiens

<220>

<221> MISC_FEATURE

<222> (94)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> MISC_FEATURE

<222> (157)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> MISC_FEATURE

<222> (303)

<223> Xaa equals any of the naturally occurring L-amino acids

```

<220>
<221> MISC_FEATURE
<222> (314)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> MISC_FEATURE
<222> (320)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> MISC_FEATURE
<222> (324)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> MISC_FEATURE
<222> (325)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> MISC_FEATURE
<222> (351)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 11
Met Thr Gly Pro Gly Lys His Lys Cys Glu Cys Lys Ser His Tyr Val
  1              5              10              15

Gly Asp Gly Leu Asn Cys Glu Pro Glu Gln Leu Pro Ile Asp Arg Cys
      20              25              30

Leu Gln Asp Asn Gly Gln Cys His Ala Asp Ala Lys Cys Val Asp Leu
  35              40              45

His Phe Gln Asp Thr Thr Val Gly Val Phe His Leu Arg Ser Pro Leu
  50              55              60

Gly Gln Tyr Lys Leu Thr Phe Asp Lys Ala Arg Glu Ala Cys Ala Asn
  65              70              75              80

Glu Ala Ala Thr Met Ala Thr Tyr Asn Gln Leu Ser Tyr Xaa Gln Lys
      85              90              95

Ala Lys Tyr His Leu Cys Ser Ala Gly Trp Leu Glu Thr Gly Arg Val
  100              105              110

Ala Tyr Pro Thr Ala Phe Ala Ser Gln Asn Cys Gly Ser Gly Val Val
  115              120              125

Gly Ile Val Asp Tyr Gly Pro Arg Pro Asn Lys Ser Glu Met Trp Asp
  130              135              140

Val Phe Cys Tyr Arg Met Lys Asp Val Asn Cys Thr Xaa Lys Val Gly
  145              150              155              160

Tyr Val Gly Asp Gly Phe Ser Tyr Ser Gly Asn Leu Leu Gln Val Leu
      165              170              175

Met Ser Phe Pro Ser Leu Thr Asn Phe Leu Thr Glu Val Leu Ala Tyr
  180              185              190

Ser Asn Ser Ser Ala Arg Gly Arg Ala Phe Leu Glu His Leu Thr Asp
  195              200              205

Leu Ser Ile Arg Gly Thr Leu Phe Val Pro Gln Asn Ser Gly Leu Gly
  210              215              220

```

Glu Asn Glu Thr Leu Ser Gly Arg Asp Ile Glu His His Leu Ala Asn
 225 230 235 240
 Val Ser Met Phe Phe Tyr Asn Asp Leu Val Asn Gly Thr Thr Leu Gln
 245 250 255
 Thr Arg Leu Gly Ser Lys Leu Leu Ile Thr Asp Arg Gln Asp Pro Leu
 260 265 270
 His Pro Thr Glu Thr Arg Cys Val Asp Gly Arg Asp Thr Leu Glu Trp
 275 280 285
 Asp Ile Cys Ala Ser Asn Gly Ile Thr His Val Ile Ser Arg Xaa Leu
 290 295 300
 Lys Ala Pro Pro Ala Pro Val Thr Leu Xaa His Thr Gly Leu Gly Xaa
 305 310 315 320
 Gly Ile Phe Xaa Xaa Ile Ile Leu Val Thr Gly Ala Val Ala Leu Ala
 325 330 335
 Ala Tyr Ser Tyr Phe Arg Ile Asn Arg Lys Thr Ile Gly Phe Xaa His
 340 345 350

Phe

<210> 12

<211> 275

<212> PRT

<213> Mus musculus

<400> 12

Met Val Val Leu Leu Cys Leu Cys Val Leu Leu Trp Glu Glu Ala His
 1 5 10 15
 Gly Trp Gly Phe Lys Asn Gly Ile Phe His Asn Ser Ile Trp Leu Glu
 20 25 30
 Gln Ala Ala Gly Val Tyr His Arg Glu Ala Arg Ala Gly Arg Tyr Lys
 35 40 45
 Leu Thr Tyr Ala Glu Ala Lys Ala Val Cys Glu Phe Glu Gly Gly Arg
 50 55 60
 Leu Ala Thr Tyr Lys Gln Leu Glu Ala Ala Arg Lys Ile Gly Phe His
 65 70 75 80
 Val Cys Ala Ala Gly Trp Met Ala Lys Gly Arg Val Gly Tyr Pro Ile
 85 90 95
 Val Lys Pro Gly Pro Asn Cys Gly Phe Gly Lys Thr Gly Ile Ile Asp
 100 105 110
 Tyr Gly Ile Arg Leu Asn Arg Ser Glu Arg Trp Asp Ala Tyr Cys Tyr
 115 120 125
 Asn Pro His Ala Lys Glu Cys Gly Gly Val Phe Thr Asp Pro Lys Arg
 130 135 140
 Ile Phe Lys Ser Pro Gly Phe Pro Asn Glu Tyr Asp Asp Asn Gln Val
 145 150 155 160
 Cys Tyr Trp His Ile Arg Leu Lys Tyr Gly Gln Arg Ile His Leu Ser
 165 170 175
 Phe Leu Asp Phe Asp Leu Glu His Asp Pro Gly Cys Leu Ala Asp Tyr
 180 185 190

Val Glu Ile Tyr Asp Ser Tyr Asp Asp Val His Gly Phe Val Gly Arg
195 200 205

Tyr Cys Gly Asp Glu Leu Pro Glu Asp Ile Ile Ser Thr Gly Asn Val
210 215 220

Met Thr Leu Lys Phe Leu Ser Asp Ala Ser Val Thr Ala Gly Gly Phe
225 230 235 240

Gln Ile Lys Tyr Val Thr Val Asp Pro Ala Ser Lys Ser Ser Gln Ala
245 250 255

Lys Asn Thr Ser Thr Thr Gly Asn Lys Lys Phe Leu Pro Gly Arg Phe
260 265 270

Ser His Leu
275

<210> 13
<211> 44
<212> DNA
<213> artificial sequence

<220>
<223> contains an EcoRI restriction site

<400> 13
gcagcaggat ccatgatgga ccagggctgc cgggaaatcc ttac

44

<210> 14
<211> 44
<212> DNA
<213> artificial sequence

<220>
<223> contains a XhoI restriction site

<400> 14
gcagcatcta gatacattga ctgtgaggat cctctgggtg tcag

44

<210> 15
<211> 45
<212> DNA
<213> artificial sequence

<220>
<223> contains an EcoRI restriction site

<400> 15
gcagcaggat ccatgggtcac ttgtacctgc ctgcccgaact acgag

45

<210> 16
<211> 45
<212> DNA
<213> artificial sequence

<220>
<223> contains a XhoI restriction site

<400> 16
gcagcaggat ccatgggtcac ttgtacctgc ctgcccgaact acgag

45

<210> 17
 <211> 48
 <212> DNA
 <213> artificial sequence

 <220>
 <223> contains an EcoRI restriction site

 <400> 17
 gcagcaggat ccatgggcct gttgctcctg gtccattgc tcctgctg 48

 <210> 18
 <211> 46
 <212> DNA
 <213> artificial sequence

 <220>
 <221> misc_feature
 <222> (40)
 <223> n equals a, t, g or c

 <220>
 <223> contains a XhoI restriction site

 <400> 18
 gcagcatcta gaatttttct tggcaggctt cccttgcttn tgtcag 46

 <210> 19
 <211> 44
 <212> DNA
 <213> artificial sequence

 <220>
 <223> contains an EcoRI restriction site

 <400> 19
 gcagcaggat ccatgacagg cccgggcaag cacaagtgtg agtg 44

 <210> 20
 <211> 49
 <212> DNA
 <213> artificial sequence

 <220>
 <221> misc_feature
 <222> (21)
 <223> n equals a, t, g or c

 <220>
 <223> contains a XhoI restriction site

 <400> 20
 gcagcatcta gatcaaaatg ntggaagccg attgttttcc ggtttatcc 49

 <210> 21
 <211> 50
 <212> DNA
 <213> artificial sequence

 <220>
 <223> contains a BglII restriction site

 <400> 21
 gcagcaagat ctgccatcat gatggaccag ggctgccggg aaatccttac 50

<210> 22
 <211> 45
 <212> DNA
 <213> artificial sequence

 <220>
 <223> contains a XbaI restriction site

 <400> 22
 gcagcatcta gatcacttga ctgtgaggat cctctgggtg tcagg 45

 <210> 23
 <211> 51
 <212> DNA
 <213> artificial sequence

 <220>
 <223> contains a BglII restriction site

 <400> 23
 gcagcaagat ctgccatcat ggtcacttgt acctgcctgc ccgactacga g 51

 <210> 24
 <211> 45
 <212> DNA
 <213> artificial sequence

 <220>
 <223> contains an XbaI restriction site

 <400> 24
 gcagcatcta gatcacttga ctgtgaggat cctctgggtg tcagg 45

 <210> 25
 <211> 54
 <212> DNA
 <213> artificial sequence

 <220>
 <223> contains a BglII restriction site

 <400> 25
 gcagcaagat ctgccatcat gggcctgttg ctcttggtcc cattgctcct gctg 54

 <210> 26
 <211> 46
 <212> DNA
 <213> artificial sequence

 <220>
 <221> misc_feature
 <222> (40)
 <223> n equals a, t, g or c

 <220>
 <223> contains an XbaI restriction site

 <400> 26
 gcagcatcta gaatttttct tggcaggctt cccttgcttn tgtcag 46

 <210> 27
 <211> 50

<212> DNA
 <213> artificial sequence

 <220>
 <223> contains a BglII restriction site

 <400> 27
 gcagcaagat ctgccatcat gacaggcccg ggcaagcaca agtgtgagtg 50

 <210> 28
 <211> 49
 <212> DNA
 <213> artificial sequence

 <220>
 <221> misc_feature
 <222> (21)
 <223> n equals a,t,g, or c

 <220>
 <223> contains a XbaI restriction site

 <400> 28
 gcagcatcta gatcaaatg ntggaagccg attgttttcc ggtttatcc 49

 <210> 29
 <211> 50
 <212> DNA
 <213> artificial sequence

 <220>
 <223> contains a BamHI restriction site

 <400> 29
 gcagcaagat ctgccatcat gatggaccag ggctgccggg aaatccttac 50

 <210> 30
 <211> 44
 <212> DNA
 <213> artificial sequence

 <220>
 <223> contains an XbaI restriction site

 <400> 30
 gcagcatcta gatcacttga ctgtgaggat cctctgggtg tcag 44

 <210> 31
 <211> 54
 <212> DNA
 <213> artificial sequence

 <220>
 <223> contains a BamHI restriction site

 <400> 31
 gcagcaagat ctgccatcat gatggtcact tgtacctgcc tgcccgacta cgag 54

 <210> 32
 <211> 45
 <212> DNA
 <213> artificial sequence

<220>
 <223> contains an XbaI restriction site

 <400> 32
 gcagcatcta gatcacttga ctgtgaggat cctctgggtg tcagg 45

 <210> 33
 <211> 54
 <212> DNA
 <213> artificial sequence

 <220>
 <223> contains a BamHI restriction site

 <400> 33
 gcagcaagat ctgccatcat gggcctgttg ctcctgggtcc cattgctcct gctg 54

 <210> 34
 <211> 46
 <212> DNA
 <213> artificial sequence

 <220>
 <221> misc_feature
 <222> (40)
 <223> n equals a, t, g or c

 <220>
 <223> contains an XbaI restriction site

 <400> 34
 gcagcatcta gaatttttct tggcaggctt cccttgcttn tgtcag 46

 <210> 35
 <211> 50
 <212> DNA
 <213> artificial sequence

 <220>
 <223> contains a BamHI restriction site

 <400> 35
 gcagcaagat ctgccatcat gacaggcccg ggcaagcaca agtgtgagtg 50

 <210> 36
 <211> 49
 <212> DNA
 <213> artificial sequence

 <220>
 <221> misc_feature
 <222> (21)
 <223> n equals a, t, g or c

 <220>
 <223> contains an XbaI restriction site

 <400> 36
 gcagcatcta gatcaaaatg ntggaagccg attgttttcc ggtttatcc 49

 <210> 37
 <211> 733
 <212> DNA

<213> Homo sapiens

<400> 37

```
gggatccgga gcccaaattct tctgacaaaa ctcacacatg cccaccgtgc ccagcacctg 60
aattcgaggg tgcaccgtca gtcttcctct tcccccaaa acccaaggac accctcatga 120
tctcccgga tcttgaggtc acatgcgtgg tgggtggacgt aagccacgaa gaccctgagg 180
tcaagttaa ctggtacgtg gacggcgtgg aggtgcataa tgccaagaca aagccgcggg 240
aggagcagta caacagcacg taccgtgtgg tcagcgtcct caccgtcctg caccaggact 300
ggctgaatgg caaggagtac aagtgaagg tctccaacaa agccctccca acccccatcg 360
agaaaaccat ctccaaagcc aaagggcagc cccgagaacc acaggtgtac accctgcccc 420
catcccggga tgagctgacc aagaaccagg tcagcctgac ctgcctggtc aaaggcttct 480
atccaagcga catcgccgtg gagtgggaga gcaatgggca gccggagAAC aactacaaga 540
ccacgcctcc cgtgctggac tccgacggct ccttcttcct ctacagcaag ctcaccgtgg 600
acaagagcag gtggcagcag gggaacgtct tctcatgctc cgtgatgcat gaggtctctg 660
acaaccacta cacgcagaag agcctctccc tgtctccggg taaatgagtg cgacggccgc 720
gactctagag gat 733
```